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ABSTRACT

This study presents the 1973-1974 evaluation findings for the New Jersey individually Guided Education (IGE) process. Student outcomes in the cognitive and affective domain were investigated in the IGE setting and in the control setting. Additionally, factors which may facilitate a long-term commitment to the IGE process were examined. Included in the report is a "consumer package" which can be used by local educational agencies to assess the effectiveness of the IGE process at the local level. (Author)

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EVALUATION REPORT

INDIVIDUALLY GUIDED EDUCATION - MULTI-SCHOOL COMPONENT

(IGE/MUS-E)

IN NEW JERSEY

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Evaluation Report
of
Individually Guided Education - Multi-Unit School Component
(IGE/MUS-E)
in New Jersey
1973 - 1974

The following materials are submitted by RETE as the evaluation component of the 1973 - 1974 IGE/MUS-E Title III grant.

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GOAL I

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will produce significant changes in student learnnng.

Objective 1.1 In comparison with children in control groups, students in IGE classrooms will show significantly greater achievement in reading and/or math as measured by a standardized achievement test. (Reading and/or math will be measured as appropriate to the implementation process in the specific schools in the study. Comparisons, using a t-test at a 0.05 level of significance will be made between test scores of children in control groups and test scores of children in IGE settings.)

Evaluation procedures:

Within the New Jersey Individually Guided Education/Multiunit School Component (IGE/MUS-E) network there are 52 schools (19 first cycle and 33 second cycle) which meet the IGE/MUS-E minimum implementation criteria: multiunit components, a functioning Instructional Improvement Committee and implementation of the IGE process in at least one curruculum area.

For this study, a stratified two-stage random sampling procedure was undertaken to identify the IGE schools to be included in the study and to identify the students within each of these IGE schools to be tested. Of the 52 IGE schools meeting minimum implementation criteria, 33 schools which are proportionately representative of the four New Jersey IGE leagues (Central, South, Northwest, and Northeast) were randomly selected to participate in this study.

All IGE schools which had been identified as participating in the 1973-1974 evaluation study were contacted by letter, explaining the evaluation procedures. At that time, the testing procedures and testing times were outlined. It was also requested that the respective principals submit to RETE a roster of students in their school meeting specified age/grade requirements, a list of dates when testing could not take place in their schools, and a time schedule indicating school hours, lunch times, special classes, et cetera.

Control schools which had participated in the 1972-1973 IGE/MUS-E evaluation were again asked to participate in the 1973-1974 IGE evaluation. For those IGE schools in the sample that did not have a carry-over control school, all attempts were made to match a new control school as closely as possible to the IGE schools in question on the following criteria: student enrollment, staff size, grade levels included and equalized valuation of the community. These same criteria for control school matching were employed in the 1972-1973 evaluation design.

Once contact had been established between RETE and the control schools ascertaining their agreement to participate in the study, a follow-up letter was mailed, outlining the focus of the evaluation procedures that would be employed by RETE.

It was determined by the New Careers in Education Office and by RETE that the target population of the student testing should be students between the ages of eight and ten who were in their second or third year of school beyond kindergarten.

These students were selected at random from the school rosters provided. Listed below is the rationale for selection of the designated age/grade level:

a. middle range of age distribution
b. tests for younger students are not as reliable
c. 4th graders were included in the 1973-1974 New Jersey Educational Assessment Program and should not be tested again
d. this age range grouping is found in many IGE schools as evidenced by the 1973-1974 Pertinent Data Bulletin.

The target sample was determined to be 385 students from the 33 IGE schools in the sample and 385 students from the 33 matched control schools in the sample. The IGE sample of students was proportionately allocated to schools based on total number of students in that age range per IGE League.

Class rosters were requested of the IGE schools for she specified age range. The appropriate number os students to be tested from that school were then randomly identified from that school. Three alternate names were also randomly drawn to serve as back-ups if the designated students should be absent during the time of testing.

For the control schools, procedures were outlined by which designated RETE personnel would randomly select the appropriate number of second graders and third graders at the time of testing, the number of second and third graders being dependent on the number of those respective students in the IGE sample.

Appropriate batteries of the 1973 Stanford Achievement Test (Primary Level II) to measure cognitive outcomes were chosen.

The Stanford Achievement Test (Primary Level II) was selected because:

a. an appropriate battery existed for testing grade levels two and three

b. at all levels through Intermediate II, the vocabulary test is dictated by the teacher and therefore tests the student's vocabulary independent of reading ability

c. in the language arts area of reading and listening, the content has been chosen to be appropriate for children from urban, suburban, rural, and inner-city schools. (The paragraphs have a broad spectrum of appeal.)

d. the content of the mathematics and language tests is designed to meet the latest curriculum trends in these subject areas

d. the Stanford edition used was the new 1973 edition, thus reducing an element of student test wiseness

f. an attempt was made to reduce test bias in the norming process.

The IGE schools were implementing the IGE process in language ares and/or mathematics. For this reason the IGE sample of schools was partitioned into two groups for testing. One group of schools would use appropriate language arts batteries and one group of IGE schools would use appropriate mathematics batteries of the Stanford Achievement Test.

The following batteries of the Stanford Achievement Tests (primary Level II) were chosen:

	Type	Items	Time
Language Arts	Vocabulary	37	20
	Reading Comprehension (Part A and Part B)	93	45
Mathematics	Concepts	35	20
	Computation	37	30

The ~~original~~ IGE evaluation design specified that RETE personnel would be responsible for all test administration in the cognitive and affective domains. In all testing sites across the state the students in both the IGE and the control groups were to be tested in February, 1974 to allow for sufficient exposure to the IGE/non-IGE experience. Intervening variables caused by the energy crisis and the extremely short allocations of gas in the North Jersey area prevented full implementation of the design by RETE personnel. With the agreement of the New Careers in Education Office, it was decided that the principal of each school would be asked to identify a test administrator in his/her school to administer the appropriate batteries of the Stanford Achievement Tests to the student sample.

Contacts were made with the IGE schools and the non-IGE schools by RETE personnel and procedures for the mailing, handling, and administration of the Stanford Achievement Tests were supplied. An identified sample of students to be tested was provided for IGE schools. Non-IGE schools were given guidelines for random sampling and a table of random numbers. Test packets were mailed out to the respective schools with appropriate information regarding testing procedures and testing times. (See Appendix A.) Log sheets and feedback sheets were also enclosed in order to elicit data as to how and when testing was carried out and under what conditions. Test materials were logged upon return by the schools.

A total of thirty IGE and 23 control schools returned the materials and participated in the evaluation. Although ten other control schools had indicated that they would participate in the testing, they in fact did not implement the testing. These data are recorded in the RETE-IGE log book. The schools who participated in the study are presented on the following pages along with a breakdown of the number of students who participated in the testing.

Participating Schools - IGE Evaluation Design

Reading

IGE	Control
Fairmount Ave. School, Chatham	Lincoln School, Dumont
H.M. Davis School, River Edge	Roosevelt School, River Edge
Lincoln School, Caldwell	
P.S. #27, Paterson	P.S. #7, Paterson
Fairview School, Red Bank	River Plaza, Red Bank
Court St. School, Freehold	Morganville School, Red Bank
Lavallette School, Lavallette	Island Heights Elem., Island Hts.
H.L. Bonsall School	
Center City Catholic, Camden	Holy Name School, North Camden
Lincoln Ave. School, Orange	Lincoln School, East Orange
Marie V. Duffy School, Wharton	Riverview School, Denville
Green Township School, Greendell	Hamburg Elementary School, Hamburg
Smalley School, Bound Brook	La Monte School, Bound Brook
So. Main Street School, Pleasantville	North Main St. School, Pleasantville
Monument School, Trenton	

Northwest league - 4 schools
Northeast league - 4 schools
Central league - 4 schools
Southern league - 3 schools

chools Implementing Mathematics

IGE	Control
igh Bridge Elementary, High Bridge	Franklin Elementary, Franklin
locktown Rd. School, Long Valley	Old Farmers Rd. School, Long Valley
ollins School, Livingston	Riker Hill School, Long Valley
udd School, North Brunswick	John Adams School, North Brunswick
emorial School, Union Beach	
ur Lady Star of the Sea, Cape May	St. Raymond's School, Villas
aude Wilkins School, Maple Shade	School #4, Maple Shade
rving School, Highland Park	Lafayette School, Highland Park
nna C. Scott School, Leonia	
erriam Ave. School, Newton	Halsted St. School, Newton
arion Emmons McKeown School, Newton	Stillwater Elem. School, Stillwater
urray A. Chittick School, East Brunswick	Memorial School, East Brunswick
lenwood School, Wall Twp.	Herbertsville School, Herbertsville
erfield School, Linden	
hn Fenwick School, Salem City	

Northwest league - 4 schools
Northeast league - 3 schools
Central league - 5 schools
Southern league - 3 schools

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Table I

	Mathematics			Reading		
	##Schools	Piers-Harris # Students	Stanford # Students	# Schools	Piers-Harris # Students	Stanford # Students
IGE	15	173	192	15	167	167
Control	11	124	133	12	130	128
Total	26	297	325	27	297	295

$n_{IGE}(PH) = 340$ $n_{Con}(PH) = 254$ Total Piers-Harris = 594

$n_{IGE}(Stanford) = 359$ $n_{Con}(Stanford) = 261$ Total Stanford = 620

Evaluation findings

Data from three of the language arts batteries of the Stanford Achievement Test are presented in tables II and III. Data reflect the number correct and may be compared with norm tables, located in the appendix.

A comparison of the pairs of schools (IGE/control) in vocabulary show eight instances in which the mean scores of the control schools were slightly higher and four in which IGE means exceeded. Pairs of mean scores on Reading/Part A (which measures ability to read words that are generally in the average child's speaking and listening vocabulary and is essentially a decoding test) shows six comparisons favoring control and six favoring IGE. The Reading/Part B Battery (which measures pupils' ability to recall and identify facts stated in the text of very simple paragraphs) shows nine comparisons in favor of IGE and three in favor of the control schools.

Statistical comparison of overall mean scores (t-test at a 0.05 level of significance) show no significant differences. These findings are presented in table VI.

Data from math batteries of the Stanford Achievement Test are presented in tables IV & V.Comparisons of mean scores in math concepts indicates that in seven of the pairs,(IGE/control) differences were in favor of IGE schools and in four pairs the mean score of the control school was greater. Comparisons on math computation show five in favor of IGE and six for the control.

Statistical comparisons (t-test at a 0.05 level of significance) were made between the mean score of IGE and non-IGE schools for math concepts, math compuatation and for a composite of the two. As indicated in table VI statistically significant differences were found in all three tests, with the differences favoring the control schools. Thus, although a greater number of IGE schools scored higher than their respective control schools, comparisons in which the magnitude of difference was considered indicated control schools were performing significantly higher.

Conclusions

Within the parameters of this study, no statistically significant differences were found in the language arts achievement of children in IGE and non-IGE schools. Statistically significant differences in math tended to favor control schools, however.

This study did not indicate what differences might be produced by the IGE process itself. Perhaps the findings reflect on the quality of the particular curriculum adopted in math or reading; or perhaps they reflect more emphasis on the part of teachers in the areas of language arts and concept formation. Criterion-referenced testing may be more appropriate for the IGE setting than the norm based instruments, such as the Stanford.

Within an innovative process which requires both reorganization of the classroom as well as a change in curriculum, one might expect that a great deal of student energy is used in adapting to the new expectations. The findings here indicate that the achievement of these children is still at an approximately equal level with the achievement of children in control schools. Findings may also reflect a need for special attention to more "structured" skills, such as computation and vocabulary building when a school changes to a flexible organization and approach such as IGE.

Table II

Language Arts

Summary Statistics

Test	$\bar{x}$		STD		S.E.	
	IGE	Control	IGE	Control	IGE	Control
Vocabulary	26.62	27.17	6.39	5.35	0.49	0.47
Reading (Part A)	36.30	35.57	9.52	8.72	0.73	0.77
Reading (Part B)	34.35	33.34	12.41	10.21	0.96	0.90
Total Reading Scores (Vocabulary & Reading - Part A and B)	97.28	96.37	26.37	22.31	2.04	1.97

Table III

LANGUAGE ARTS - SCHOOL DATA BY CODE

EXPERIMENTAL GROUP

	Vocabulary		Reading/Part A		Reading/Part B			Vocabular
Code	Mean	STD	Mean	STD	Mean	STD	Code	Mean
50	26.55	7.10	37.66	7.61	37.55	6.65	51	26.70
52	31.30	3.46	43.20	1.31	45.20	5.47	53	30.40
54	30.27	4.54	40.45	5.12	40.09	7.79		
56	32.07	2.95	40.53	6.05	41.76	8.19	57	21.07
58	29.10	5.89	38.00	7.94	37.40	10.01	59	28.20
60	23.66	6.48	33.88	9.46	30.66	14.30	61	26.80
62	29.70	5.22	40.60	4.32	41.50	5.38	63	30.40
64	22.45	5.29	29.66	9.29	24.62	10.96		
66	24.77	5.56	32.44	9.78	24.66	9.83	67	30.60
68	22.36	6.71	30.09	14.24	27.36	16.09	69	20.36
70	29.66	5.12	41.58	3.44	41.83	6.80	71	29.78
72	24.80	7.96	33.90	11.86	35.10	15.35	73	26.20
74	30.00	3.50	42.77	2.77	44.66	2.50	75	30.30
76	25.20	5.32	31.50	13.58	23.20	11.39	77	26.70
78	20.90	5.54	35.60	9.08	31.70	10.98		

Table III

AGE ARTS - SCHOOL DATA BY CODE

CONTROL GFOUP

eading/Part B			Vocabulary		Reading/Part A		Reading/Part B	
ean	STD	Code	Mean	STD	Mean	STD	Mean	STD
7.55	6.65	51	26.70	4.62	36.20	7.59	32.09	11.09
5.20	5.47	53	30.40	3.80	38.40	5.29	34.10	10.66
0.09	7.79							
1.76	8.19	57	21.07	5.86	34.76	6.26	32.00	7.93
7.40	10.01	59	28.20	3.48	34.70	7.55	29.80	11.82
0.66	14.30	61	26.80	3.70	39.20	3.99	37.90	5.44
.50	5.38	63	30.40	2.87	41.00	4.54	29.70	5.57
.62	10.96							
.66	9.83	67	30.60	3.62	37.50	3.92	41.80	4.46
.36	16.09	69	20.36	4.36	21.00	11.28	21.00	10.64
.83	6.80	71	29.78	3.61	38.57	8.26	39.28	8.50
.10	15.35	73	26.20	5.71	36.10	8.04	34.30	10.13
.66	2.50	75	30.30	3.91	37.90	8.65	38.70	8.94
.20	11.39	77	26.70	4.05	32.00	9.47	27.90	8.81
.70	10.98							

Table IV

Mathematics

Summary Statistics

Test	$\bar{x}$		STD		S.E.	
	IGE	Control	IGE	Control	IGE	Control
Mathematics Concepts	n=191 25.08	n=132 27.40	6.32	5.08	0.45	0.44
Math Computation	n=191 24.40	n=132 26.95	6.70	6.57	0.48	0.57
Total Math Score (Concepts & Computation)	n=191 49.62	n=132 54.22	12.09	10.50	0.87	0.91

Table V

Even number - IGE Schools
Odd numbers - Control Schools

Mathematics - School Data by Code

		Math Concepts			Math Computation			Total (Concepts & Computation)		
Code	n	$\bar{x}$	STD	S.E.	$\bar{x}$	STD	S.E.	$\bar{x}$	STD	S.E.
80	10	25.40	5.08	1.60	22.80	4.23	1.33	48.20	8.53	2.69
81	10	23.90	7.20	2.27	28.20	3.48	1.10	52.20	9.94	3.14
82	9	28.60	3.33	1.05	25.30	6.99	2.21	53.90	9.10	2.88
83	9	27.22	3.30	1.10	25.11	5.66	1.88	52.33	8.80	2.93
84	13	26.00	5.08	1.40	24.69	6.15	1.70	53.00	15.30	4.24
85	14	30.35	3.29	0.88	30.64	6.44	1.72	61.00	8.46	2.26
86	16	29.68	3.07	0.76	31.62	4.47	1.11	61.31	6.25	1.56
87	16	27.68	6.30	1.57	27.75	8.16	2.04	55.43	13.31	3.32
88	20	22.90	6.31	1.41	25.20	6.40	1.43	48.10	11.70	2.61
90	9	29.66	4.09	1.36	25.44	6.28	2.09	55.11	9.27	3.09
91	9	26.66	4.92	1.64	19.77	7.61	2.53	46.44	11.85	3.95
92	16	24.81	6.45	1.61	28.18	4.10	1.02	53.00	9.80	2.45
93	15	26.33	4.49	1.16	25.53	3.96	1.02	51.86	7.90	2.04
94	9	22.33	4.69	1.56	21.00	8.27	2.75	43.33	12.85	4.28
95	10	29.30	2.26	0.71	30.80	6.28	1.98	60.10	7.78	2.46
* 96	9	25.66	6.14	2.04	24.44	4.69	1.56	50.11	9.86	3.28
98	14	25.57	8.92	2.38	23.85	8.07	2.15	49.42	14.75	3.94
99	16	23.09	6.47	1.95	25.72	4.77	1.44	48.81	10.66	3.21
100	11	18.81	5.03	1.51	18.36	6.85	2.06	36.54	9.38	2.82
101	12	26.25	6.04	1.74	25.00	8.48	2.44	51.25	13.16	3.80
104	13	22.38	5.93	1.64	21.92	5.78	1.60	44.30	9.85	2.73
105	11	30.54	2.76	0.83	31.54	4.50	1.35	62.09	4.67	1.41
106	16	28.00	3.46	0.86	28.06	4.10	1.02	56.06	5.69	1.42
107	16	27.81	4.26	1.06	25.06	4.47	1.11	52.87	7.32	1.83
*108	10	28.60	5.05	1.60	20.90	2.68	0.84	49.00	7.19	2.27
*110	16	20.00	6.88	1.72	19.06	6.45	1.61	39.06	12.25	3.06

*Absence of number indicates school either refused to participate after deadline or forgot to administer instruments. Thus, no control is available.

Table VI

Comparisons	n	$\overline{x}$	STD	S.E.	F	type of t-test	t	df
Vocabulary - IGE	167	26.62	6.39	0.49	1.42*	separate variance model	.82	n_1 = 166 n_2 = 127
Control	128	27.17	5.35	0.47				
Reading-Part A								
IGE	167	36.30	9.52	0.73	1.19	pooled variance model	0.68	293
Control	128	35.57	8.72	0.77				
Reading-Part B								
IGE	167	34.35	12.41	0.96	1.47*	separate variance model	0.77	n_1 = 166 n_2 = 127
Control	128	33.34	10.21	0.90				
Total-Reading								
IGE	167	97.28	26.37	2.04	1.39*	separate variance model	0.32	n_1 = 166 n_2 = 127
Control	128	96.37	22.31	1.97				
Mathematics-Concepts								
IGE	192	25.08	6.32	0.45	1.54*	separate variance model	3.74*	n_1 = 191 n_2 = 132
Control	133	27.40	5.08	0.44				
Math-Computation								
IGE	192	24.40	6.70	0.48	1.04	pooled variance model	3.36*	323
Control	133	26.95	6.57	0.57				
Total Mathematics								
IGE	192	49.62	12.09	0.87	1.32*	separate variance model	3.68*	n_1 = 191 n_2 = 132
	133	54.22	10.50	0.91				

NOTE: * significant at a 0.05 level

GOAL I

Objective 1.2 In comparison with children in control groups students in IGE classes will demonstrate significantly more positive attitudes toward school. Comparisons using a t-test at a 0.05 level of significance will be made between test scores of children in control settings and of test scores of children in IGE settings.

Evaluation procedures:

The same evaluation procedures which were implemented with respect to cognitive testing were followed with regard to the affective testing. Due to the constraints of the energy crisis it was necessary to change testing procedures for objective 1.2. It was not appropriate for a test administrator other than designated RETE personnel to administer the Attitude Toward Classroom Atmosphere (ATCA) inventory, the originally selected instrument. Due to these constraints and with the agreement of the New Careers in Education Office, the Piers-Harris Children's Self-Concept Scale (The Way I Feel About Myself) was substituted. This self-concept scale is self-report in format and is designed for children over a wide range of ages. The technical information for the Piers-Harris Children's Self-Concept Scale is found in Appendix B. The scale contains 80 items, with the highest attainable score being 80.

Not all schools which had originally agreed to participate in this aspect of the testing in fact implemented the affective testing. These data are retained in the RETE log book.

Evaluation findings

Summary statistics and school data listed by code are presented on the following pages. Mean total scores on the Piers-Harris Self-Concept Scale range from 49.11 to 69.20, a spread of almost 20 points, and well below the ceiling of the test (highest possible score is 80). A check of the differences between matched pairs indicates very little overall differences between the IGE schools and their control schools. Overall, in ten of the pairs, differences favor IGE schools; in eleven of the pairs differences favor the control school, and in one pair the mean scores were the same.

Statistical comparisons (t-test at a 0.05 level of significance) were made between mean total scores for IGE and for control schools. The findings are presented in table IX (Norms and additional data on the Piers-Harris Scale are located in the appendix.)

As indicated in table IX no statistically significant differences were found. Thus, it appears that children in IGE and in non-IGE schools do not differ significantly in self-concepts, as measured by the Piers-Harris.

Conclusions

Data indicate no significant differences between IGE and control schools in students' self-concepts. Perhaps changes that are occuring within the experimental program have not had time to affect the child's self-concept. At any rate, the children in the IGE schools have experienced a new approach in school organization and curriculum and maintained self-concepts that are similar to those in schools that have not made this change. Further study is recommended as a means of indicating what affective changes may be produced by the IGE process.

Table VII

Piers-Harris Self-Concept Scale

Even # - IGE
Odd # - Control

Reading Group

School Code	n	$\overline{x}$	STD	S.E.
50	9	58.44	9.64	3.21
51	10	59.00	9.32	2.94
52	10	61.50	10.81	3.41
53	10	58.80	15.17	4.79
54	11	61.36	5.93	1.79
56	13	60.53	10.76	2.98
57	14	63.35	7.88	2.10
58	10	60.90	9.84	3.11
59	10	59.40	5.91	1.86
60	9	49.11	5.71	1.90
61	11	54.63	11.13	3.35
62	10	56.70	16.16	5.11
63	10	61.60	5.75	1.82
65	24	54.45	11.55	2.35
66	9	60.88	10.99	3.66
67	10	57.60	10.24	3.23
68	11	54.63	14.48	4.36
69	11	50.90	12.86	3.87
70	12	62.00	6.53	1.88
71	14	65.64	9.67	2.58
72	10	57.30	9.94	3.14
73	10	60.80	11.66	3.69
74	9	65.44	9.08	3.02
75	10	61.40	12.78	4.04
76	10	54.20	9.27	2.93
77	10	54.20	19.61	6.20
78	10	56.70	10.07	3.18

Table VIII

Piers-Harris Self-Concept Scale

Mathematics Group

Even # - IGE
Odd # - Control

School Code	n	$\bar{x}$	STD	S.E.
80	10	61.90	7.86	2.48
81	10	60.70	9.82	3.10
82	10	58.90	11.51	3.64
83	9	60.88	11.02	3.67
86	15	63.13	12.28	3.17
87	16	62.43	8.89	2.22
88	20	60.15	11.47	2.56
90	10	59.80	10.51	3.32
91	9	55.88	12.24	4.08
92	16	58.50	11.93	2.98
93	15	56.66	13.53	3.49
94	9	51.44	13.83	4.61
95	10	69.20	8.52	2.69
98	14	58.00	14.92	3.98
99	16	61.87	9.96	2.49
100	13	52.84	11.99	3.32
101	12	61.08	10.15	2.93
104	13	59.92	12.74	3.53
105	11	62.81	9.06	2.73
106	16	63.93	10.84	2.71
107	16	49.81	13.83	3.45
108	10	64.30	11.57	3.66
110	17	62.58	10.08	2.44

Table IX

PIERS-HARRIS CHILDREN'S SELF-CONCEPT SCALE

Comparisons	n	$\bar{x}$	STD	S.E.	F	type of t-test	t	df
Mathematics Group-IGE	173	59.67	11.92	0.90	1.03	pooled variance model	-0.02	295
Mathematics Group-Control	124	59.75	11.70	1.05	1.18			
Reading Group-IGE	167	58.03	10.80	0.83	1.18	pooled variance model	0.88	295
Reading Group-Control	130	59.22	11.76	1.03				
Total IGE Group	340	58.87	11.40	0.61	1.05	pooled variance model	0.77	592
Total Control Group	254	59.50	11.73	0.73				

GOAL II

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will show characteristics which are likely to facilitate long-term commitment to the IGE process.

2.1 Expenditures will show no significant increase for start up and maintenance costs.

2.2 Pupil absenteeism will show no significant increase from previous years.

2.3 Teacher attendance and turnover will show no significant change from previous years.

Evaluation Procedures:

RETE developed a survey form to elicit data pertinent to objective 2.1 through 2.3. The following information was sought:

Objective 2.1

Amount and use of those funds available to the building principal of an IGE/MUS-E school. (i.e., whether the school, functioning within the IGE/MUS-E design is actually more costly to operate, or whether only a redistribution of monies is required. Areas under question will include hiring of para-professionals, unit leader compensation, released time for teachers, and instructional materials.)

Objective 2.2

Pupil absenteeism in first and second cycle IGE schools

Objective 2.3

Teacher attendance/absenteeism. Incidence of teacher turnover.

The RETE developed data collection form (See Appendix A) was mailed to all IGE building principals listed in the New Careers Pertinent Data print-out in May, 1974 to allow for inclusion of data from the current academic year.

Evaluation Results:

Responses from 26 of the building principals were received. Two of the principals indicated they were not implementing the process this year. The data are tabulated on page 26.

Of the group of principals who responded, five came from schools with only one elementary school, eight have more than three elementary schools, one has two schools, and one has three. (Other forms were sent with no descriptive information.) Nine of the school districts represented had only one school in the IGE process, whereas four had two schools implementing IGE. The large majority of the schools (ten) began implementing in 1972-1973.

Fifteen principals responded to the question which dealt with the degree of autonomy the principal and IIC have with the budget. All but three of them indicated almost complete autonomy with instructional materials and equipment (rating of four or five). There was a wide range of responses on the question dealing with staff positions with nine respondents rating the question four or five on the continuum.

With respect to start-up costs for the IGE process, a trend indicating an increase in costs for paid para-professionals, unit leader compensation, and release time for teacher in-service training was noted with the other expenditures remaining at the fixed level. A slight upward trend in costs may also be noted for materials that are consumed and for equipment. (See chart on page 27.)

A slight downward trend with respect to teacher turnover, teacher absenteeism, and pupil absenteeism may be noted. Generally, however these rates remained relatively fixed/constant.

Once the IGE start-up costs had been expended it seems that the maintenance costs did not fluctuate but remained the same. Again a slight decrease in teacher absenteeism and pupil absenteeism was noted with a majority of the responses falling into the "remain the same category" with respect to teacher turnover and teacher/pupil absenteeism.

Evaluation Conclusions:

Within the framework of this study, as a result of state network implementation of the IGE process, no unusual increases in either start-up or maintenance costs was noted. These characteristics are likely to facilitate a long-term commitment to the IGE process.

Pupil absenteeism and teacher attendance and turnover remained stable over time with the implementation of the IGE process and, if anything, evidenced a decrease in flux (teacher turnover and teacher/pupil absenteeism).

Table 10 - Descriptive Data for Implementation/Maintenance Costs Questionnaire - IGE/MUS-E

Number of elementary schools in district:

0	1	2	3	more than 3
-	5	1	1	8

Number of elementary schools in district implementing IGE/MUS-E as of school year 1973-1974:

0	1	2	3	more than 3
2	9	4	-	-

School year in which school building first implemented IGE/MUS-E:

1971-72 - 3

1972-73 - 10

1973-74 - 1

Degree of autonomy principal and IIC have in the following budget areas:

	no 1	2	3	4	complete 5
Instructional materials	1		2	4	8
Equipment	1		2	5	7
Staff positions	4		2	6	3

TABLE 11 START-UP COSTS

Category	(check one) Increase	Remain the same	Decrease	Amount of Change (Complete the appropriate column) Number	Cost $
1. Certified teachers	3	17	1		
2. Paid paraprofessionals	11	10			
3. Special area teachers (art, music, phys, ed., etc.)	2	18			
4. Unit leader compensation (beyond usual salary increments)	10	5			
5. Release time for teacher in-service training	15	5	1		
6. Materials/consultants for in-service training	6	14			
7. Per pupil expenditure	3	16			
8. Materials that are consumed	10	12			
9. Materials having relatively long life-expectancy	6	13	3		
10. Equipment	10	12			
11. Remodeling of plant	4	18			
12. Furnishings (e.g. desks, cabinets, tables, etc.)	5	17			
13. Custodians		21			
14. Other (please specify)		9			

The following changes (if any) should be indicated by %

Category	Increase	Remain the same	Decrease	Approximate % Change
1. Teacher turnover	1	15	4	
2. Teacher absenteeism		16	4	
3. Pupil absenteeism		16	4	

Category

	Increase	Remain the same	Decrease	Number	Cost $
1. Certified Teachers	1	14			
2. Paid paraprofessionals	5	8			
3. Special area teachers (art, music, phys, ed., etc.)	1	13			
4. Unit leader compensation (beyond usual salary increments)	7	7			
5. Release time for teacher in service training	4	9	1		
6. Materials/consultants for in-service training	3	11	1		
7. Per pupil expenditure	1	13	1		
8. Materials that are consumed	5	10			
9. Materials having relatively long life-expectancy	2	11	2		
10. Equipment	3	12			
11. Remodeling of plant	1	13	1		
12. Furnishings (e.g. desks cabinets, tables, etc.)	2	12	1		
13. Custodians		15			
14. Other (please specify)					

The following changes (if any) should be indicated by %:

Category	Increase	Remain the same	Decrease	Approximate % change
1. Teacher turnover		14		
2. Teacher absenteeism	1	11	2	
3. Pupil absenteeism		10	4	

GOAL II

Objective 2.4 LEA's will be able to assess the effectiveness of the IGE process at the local level.

Evaluation Process

Local school districts need to assess for themselves the effectiveness of the process in their schools. For this reason, RETE has developed an evaluation procedures packet which can be used by any LEA who is participating in the New Careers-IGE project and has not been designated as participating in the RETE-NCE evaluation design.

The evaluation procedures packet contains names, sources, and background information on instruments RETE has employed and information on additional instruments which may be applicable. References on community attitudes surveys are also included.

This packet is to be made available through the New Careers in Education Office. All or part of this packet may be employed by the LEA's at their discretion. Appropriate data analysis techniques are to be determined by the LEA with guidelines supplied in the packet.

Methods for Evaluating
An Individually Guided Education (IGE/MUS-E) Environment

School districts who elect to implement the IGE Approach to education often need assistance in evaluating progress in the implementation and in utilizing data from such evaluations to make decisions about methods of improving the implementation process. This package has been developed by the Research Evaluation Team for Education (RETE) at the Educational Improvement Center of Northwest New Jersey as an attempt to assist schools in this process. Included are overall suggestions for selecting and developing a design and sample instruments or instrument sources for objectives that have been measured by RETE in previous work.

PLANNING AN EVALUATION TO SUIT THE SCHOOLS NEEDS

This package cannot substitute for a great deal of planning and choice-making on the part of the school personnel, however. It is not possible to attend to all aspects of the implementation process at once and it is not possible to provide quantitative data on everything. Thus school personnel must decide where to focus energies first and what major questions need to be answered. The following list of tasks has been included to facilitate this planning process. School personnel should ask themselves.

1. What groups can expect answers? (parents, funding agencies, teachers, etc.)

2. For what questions can they expect to have answers? (relevant to both the changes you desire as well as the unwanted changes you might want to check)

3. What aspects of the schools philosophy, community climate, facilities, etc. will influence the results that you wish (and can realistically hope to obtain) ?

4. What interactions (teacher/teacher, teacher/student, etc.) would you like to produce that are important for reaching the goals of the project?

5. What outcomes would you like to produce (in student behaviors, teachers' behaviors, school organization, etc)?

6. What evaluation conditions are realistic in your setting (money, time, and other resources?)

7. Who will be responsible for the evaluation? (for administering instruments, handling data, assuring confidentiality of scores, analyzing results, etc.)

8. Who will be responsible for formative feedback and for reporting and interpreting results (and to what audiences)?

After an outline of objectives to be met and a plan for chain of responsibility in the evaluation have been determined, appropriate measures can be selected. Consideration should be made for the amount and type of skill required for (a) administration of the instruments (teacher, trained observer, psychologist, etc.) (b) scoring and tabulating data (c) analyzing data (by computers, by hand, what statistical treatments), (d) interpreting and reporting results. In addition, measures that yield valid and reliable scores should be sought. (In many cases a sophisticated instrument may not be as appropriate as a checklist or self-report questionnaire that more closely matches goals.)

PROCEDURES USED BY RETE

RETE has utilized a variety of measures in different types of settings. The particular instruments compiled below represent only a few of the possibilities a school may wish to try. The intent of the following is not that a school should implement the total package or even parts of each aspect, but that the school be able to choose the aspects most suited to the plan for evaluation they have developed. In the appendix a copy of the Policies and Procedures Manual for RETE and an evaluation design for Individually Guided Education (IGE/MUS-E) are provided. The purpose of this inclusion is to trigger thought and to provide a model for presentation, if desired.

RETE implementation of this design has included the initial presentation of the rationale to the project staff, identification of the student sample, test scheduling, conditions for test administration, monitoring of data scoring, data analysis, presentation of feedback to the project staff, and summation of the data in a written report.

Instruments

The instruments developed/identified by the Research Evaluation Team for Education for this evaluation have been classified according to three basic categories:

1. student instruments
    a. cognitive outcomes
    b. affective outcomes

2. teacher self-report instruments
    a. planning behaviors and priorities
    b. differential open/traditional behaviors

3. community survey instruments

The following is a brief description of each instrument that may be used in evaluation of the IGE settings, the source of the instruments, level of skill required for administration, type of score or response elicited, and appropriate applications. An asterisk (*) indicates the instruments which were used by RETE. Inclusion should not be considered as a recommendation, since each local school must decide whether those particular questions need assessment.

Student Cognitive Outcomes

1. Standardized measures Those schools that elect to measure cognitive growth have several choices. Some schools will wish to continue with the same standardized tests they have used previously. This selection will provide longitudinal data and allow for comparisons of growth in children who have previously shown high, medium or low levels of achievement. RETE has utilized the Stanford Achievement Test, 1973 edition for those schools that wish to utilize a new measure. The Stanford has an advantage of more current norms.

The Stanford Achievement Test* provides six battery levels which measure school performance from the middle of grade 1 through the middle of grade 9. The complete battery contains the following tests (administration time indicated in parentheses) which may be isolated to meet specific needs:
Vocabulary (20-25 minutes)
Reading Comprehension (35-45 minutes)
Word Study Skills through Intermediate II (20-25 minutes)
Listening Comprehension through Intermediate II (25-35 minutes)
Mathematics Concepts (20-35 minutes)
Mathematics Computation (30-35 minutes)
Mathematics Applications (beginning with Primary II; 20-35 minutes)
Spelling (15 -20 minutes)
Language (beginning with Primary III; 35 minutes)
Social Studies (beginning with Primary II; 20-30 minutes)
Science (beginning with Primary II; 20-30 minutes)

While each level is primarily designed for specific grade/age ranges, all levels have been normed in a manner which makes it possible to use any one level in a multi-age, continuous progress setting as well as for pre- and post-testing. The content has been designed to meet the latest curriculum trends in skills and concepts. The tests are intended to be administered by teachers. RETE recommends that this be the procedure within this design as well, since the children are more accustomed to such experiences with their teachers than with outside evaluators.

The use of a standardized test allows comparisons of student achievement with a normative group. Some schools will find the normative comparison inappropriate for their purposes, however.

2. Criterion-Referenced Tests Schools that wish to utilize measures that are more suited to their own objectives and who believe the only appropriate comparisons are changes that occur within the individual children from one time interval to another, may select criterion-referenced tests for this purpose.

A list of sources for item pools for the construction of criterion referenced tests is included in the appendix.

Criterion reference tests are most effectively used by the classroom teacher as a means of obtaining continuous feedback on the child's growth. Pre-post comparisons can be made on a descriptive (or percentage) basis.

Student Affective Outcomes

Note: It is especially important in measuring affective outcomes that the rights of the students be protected and that (a) they have the option of refusing to answer, (b) the answers they give be kept in strictest professional confidence, and (c) interpretations based on individual scores be made only where the test warrants.

Schools should consider identifying or hiring outside consultants to administer instruments and handle data.

a. Attitude Toward Classroom Atmosphere (ATCA) This 30 item attitude inventory was developed by RETE, based on initial work done at the Institute for Educational Research, Downers Grove, Illinois. The ATCA is read to the students below grade five so that their responses will not be confounded by reading difficulties. Students are asked to indicate agreement or disagreement with each statement by marking YES or NO with an emphasis on the fact that there are no right or wrong answers. The statements are designed to reflect the student's feelings about his/her interpersonal relationships in school as well as his/her perceptions of the role of a student in that environment. The instrument is available with two answer forms, one for first, second and third graders; another for older children.

Although no special skill is required for administration of the ATCA, the level of trust between the administrator and the children is very important for obtaining valid scores. The ATCA yields total scores which can be used for pre-post comparisons for groups only. The instrument has not been developed to a level that will permit utilization as a diagnostic measure, however.

b. Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself)* This 80 item attitude inventory was developed by Ellen Piers and Dale Harris (published by Counselor Recordings and Tests, Box 6184 Acklen Station, Nashville, Tenn.) "The Way I Feel About Myself " is a quickly completed (15-20 minutes) self report instrument designed for children over a wide age range. Administered in group form it requires approximately a third-grade reading knowledge. On an individual basis it might be used below that level. It can be administered and scored by responsible, educated non-psychologists, but should be interpreted only with the aid of someone knowledgeable in measurement and statistics, psychology of adjustment, and self-theory. The Scale was designed primarily for research on the development of children's self attitudes and correlates of these attitudes. The instrument is not for diagnostic purposes with individuals, but can provide valuable information for groups.

c. Satisfaction of Values Inventory (SAVI) This self-report inventory is a RETE developed instrument designed to measure the degree to which the 9-14-year-old child perceives his/her needs are being met in the eight values categories described by Dr. Harold Lasswell. (i.e. affection, enlightenment, skill, wealth, power, rectitude, respect, and well-being) The instrument assesses the contributions to value satisfaction made by four major categories of significant others: the home, the school, the peer group, and the community. The items are read aloud so that responses will not be confounded by reading difficulties. Students are asked to indicate whether they feel as the statement describes "often," "sometimes," or "almost never" in each of the aforementioned settings, i.e. making four discrete responses to each stimulus. There are 32 statements in all, four in each value category. The instrument, which is computer scored, yields a total score, eight subscores for the values categories and four subscores for each category of significant others. The SAVI yields a pattern of scores in a relatively short amount of administration time. Scoring is quite complicated for large numbers of students, however.

d. Creativity Attitude Survey (CAS) This self-report inventory, appropriate for 3-8 graders, was developed by Charles E. Schaefer, Ph.D., and is available from Psychologists and Educators, Inc., Jacksonville, Illinois, 62650. This instrument is included in this design under the assumption that one of the goals of the open setting is to encourage the development of positive attitudes toward creative behaviors and a positive evaluation of oneself as a creative thinker. The CAS consists of 32 statements for each of which the child is to indicate agreement or disagreement. (Two of the items are "fillers" designed to reduce the visibility of the instrument.) The instrument measures the following dimensions associated with creative achievement: confidence in own ideas, appreciation of fantasy, theoretical and aesthetic orientation, openness to impulse expression, desire for novelty. Each item can be read aloud, eliminating possible confounding effects of reading difficulties.

The CAS, ATCA, and SAVI have been used in several groups, and comparisons can be made. The development is still in process, however. The decision as to which instrument to use will depend on the specific objectives the school wishes to measure.

Sociometrics

d. Some teachers may wish to assess friendship patterns and cohesiveness within their groups. This information can be useful for teachers as they make suggestions for small group formation around a task and for identifying children with leadership positions or those who are isolated from other children. The sociometric consists of the teacher's asking each child to list three other pupils (1) with whom they would like to do a project and (2) that they would like to play with at recess. (Other situations could be substituted if an activity such as a party is actually planned.) Suggestions for analysis and use of the data are included in the appendix.

Teacher Self-Report Instruments

The following are possible ways in which teachers may check their own behavior against their goals and may assess team functioning. These measures are descriptive in nature only, and total scores are not appropriate. If group data are desired tallies of the number of responses and percentages are appropriate. It is important that teachers decide prior to use of the instrument exactly what objectives they do wish to show. Thus, a discrepancy between where they would like to be and where they actually are can be obtained.

a. Classroom Planning Survey (CPS) A RETE-developed self-report instrument, the CPS asks the teacher to indicate the relative frequency of planning and implementation behaviors in the areas of individualization, grouping criteria, evaluation modes, and teaching/learning resources. The data elicited by the items are descriptive in nature and are most appropriate as criterion-referenced information. The CPS also offers the alternative of establishing a given score as indicating achievement of target levels. Discussion within the teams of responses given by individuals can be fruitful.

b. Feedback: Process Monitoring Cards This approach to monitoring and providing continuous feedback has been developed by Creative Learning Systems, Inc., Park Centre, Suite 9A, 1701 East 12th Street, Cleveland, Ohio 44114. The cards are used by a person who fills the role of group-process observer, and provides for monitoring the statements of group members that fall into eleven different categories of behaviors that facilitate or block group functioning.

Community Survey Instruments

a. The following documents may be retrieved by use of the ERIC document retrieval service (Note ED numbers):

EJ063169 AA513297
A SURVEY CAN INCREASE SCHOOL-COMMUNITY INTERACTION
Phillips, John D. Pennsylvania Education: 3: 6: 8-10 Jul-Aug 72
Describes a survey inexpensive and relatively uncomplicated to administer, designed to measure community attitudes toward schools (Author, SP, summary)

ED063664 24 EA004347
A Study to Determine the Feasibility of Adapting the Gallup/C.F. Kettering Model for Surveying Public Opinion of Public Schools for Surveys in Local School Districts. Final Report.
Gish, Elmer H. Virginia Univ. Charlottesville
A feasibility study was made of the Gallup/Kettering plan for support in locally conducted surveys of public opinion about the public schools by implementing the plan in Richmond, Virginia. The methods used in the local survey, as well as the findings and conclusions of the feasibility study, are reported in this document. A related document is ED 046 097. (author summary)

ED020051 RC002479
An Instrument Designed to Secure Information Relative to Community Attitudes
Davis, J. Clark; Jesser, David L.
Nevada Western States Small Schools Project. Carson City.
Pub date 29OCT62 Note-19p
EDRS Price MF-$0.65 HC-$3.29
A 30choice attitudinal scale was constructed to determine community attitudes and perceptions which might affect the school program. The scale was constructed around 1 general and 4 specific categories--(1) administration, (2) finance (3) general attitudes, (4) personnel, and (5) program. The survey instrument is included, as well as data on sample selection, category frequency distribution and item analysis, and specific recommendations for administration and scoring. (DK)

ED026716 EA991926
The Schools and the Community: A communications study.
Suburban area study group, Silver Springs, MD
Spons Agency-Eugene and Agnes E. Meyer Foundation, Washington, D.C.
Pub data Jul 66 Not-456p.
EDRS Price MF$0.65 HC-$16.45
This comprehensive report of a 2-year study (1964-1966) of communications between the schools and the community includes descriptions of seven related study projects. Procedures and methodology for an effective school-community public relations program are described in a professional handbook produced as a result of the overall study. Fourteen steps for fact-finding and analysis of need, administrative, planning, and program operation are explained. The seven study projects are (1) a survey of attitudes and information about public schools in Montgomery County, Maryland, (2) a survey of school-community information services, (3) a school news survey and content analysis, (4) identification of county organizations and their relationships to schools, (5) a survey of school-community information programs in Maryland, (6) a survey of selected school public relations programs in 29 communities across the United States, and (7) the preparation of a school public relations bibliography of over 300 items availabel in the Washington, D.C. area. Appended questionnaires are

accompanied by a description of procedures followed for sampling, distribution, followup, and coding of responses. (JK)

b. Belden Associates (Southland Center, Dallas, Texas, 75201) conducted a 1972-73 national evaluation study of the IGE program for Institute for Development of Educational Activities, Inc. (IDEA). Aspects of the report focus on the following:

1. evaluation of the level of installation of the organization and the processes of the IGE program

2. assessment of the behavior of the groups of people involved directly in the IGE system

3. measurement of the attitudes of the people toward IGE and its effectiveness

Four questionnaires have been designed by Belden Associates for gathering data from school administrators,teachers, students and parents of the students in IGE schools. The questionnaires elicit information about:

1. the expectations of the various groups about IGE
2. opinions about how the expectations have or have not been met
3. the concepts that each group has of its roles and the roles of others in implementing IGE
4. perceptions of the changes being made in the IGE system
5. opinions about the effectiveness of IGE

c. Educational Values Assessment The Educational Values Assessment Questionnaire (EVA) was developed by Harry Gottesfeld (Behavioral Publications, Inc., 2852 Broadway, N.Y., N.Y. 10025) to determine educational values of individuals and groups. It focuses on beliefs people have about what is important educationally for the child of elementary or junior high school age.

The following are sources of item banks, including access to prepared lists of educational objectives:

Comprehensive Achievement Monitoring
Robert Reilly, Chief
Bureau of School and Cultural Research
University of the State of New York
State Education Department
Albany, N.Y. 12224

CTB/McGraw-Hill
Department of Programs and Services
Del Monte Research Park
Monterey, California 93940

Instructional Objectives Exchange (IOX)
Box 24095
Los Angeles, California

Minnemast Curriculum Project
Wells Hively
Department of Psychology
University of Minnesota
Minneapolis, Minnesota

Southwest Regional Laboratory for Educational Research and Development
4665 Lampson Avenue
Los Alamitos, California 90720

Educational Commission of the States
National Assessment Publications
300 Lincoln Tower
1860 Lincoln St.
Denver, Colorado 80230

Educational Progress
Educational Development Corporation
4900 South Lewis Avenue
P.O. Box 45663
Tulsa, Oklahoma 74145

Training Project
Center for Study of Evaluation (CSE)
145 Moore Hall
University of California at Los Angeles
Los Angeles, California 90024

Richard L. Zweig Associates, Inc.
20800 Beach Boulevard
Huntington Beach, California 92648

Educational Testing Service
Princeton, N.J.

Research for Better Schools
1700 Market St.
Philadelphia, PA 19103

Downers Grove Behavioral Objectives and Test Items Bank
1400 West Maple Ave.
Downers Grove, Ill. 60515

S A V I I

Directions: These are some statements that describe how a person your age might feel. Decide how often you feel this way. Place an X under "often," "sometimes," or "almost never" to show how frequently you feel this way
when you are at home
when you are at school
when you are with friends, and
when you are in your community.

In other words, when you read a statement, you will make four Xs (one X for each of the four different places you might be.)

1. I feel good here.
2. My privacy is respected by people here.
3. People here think about other people's rights before they act.
4. I have trouble saying how I feel.
5. When I am away, I miss these people.
6. People here want me to use things wisely.
7. I help make the rules we follow here.
8. I know the answers to questions people ask me.
9. I feel tense and nervous here.
10. People make fun of others who do not read well.
11. I can trust people to keep their word.
12. I can do things as well as people here can.
13. People are friendly to me.
14. People here have more things than I have.
15. I am expected to go along with what other people decide.
16. People here help me learn about things that have worked in the past.

SAMPLE - NOT FOR DUPLICATION (For additional copies, administrator' manuel, test development information, and student answer sheets contact: EIC-NW Halko Drive, Cedar Knolls, New Jersey 07927).

PLEASE TURN THE PAGE OVER

17. If I feel sick, someone here will help me.

18. People respect me when I do something well.

19. People break rules if they think they will not get caught.

20. I can learn to do things here with my hands.

21. I really like being with people here.

22. I have enough money for what I need.

23. People go along with what I need.

24. Other people seem to know more than I do.

25. I like the way I act.

26. People listen to what I say.

27. I am treated fairly here.

28. I have a chance to learn new skills here.

29. People here dislike me.

30. People here help me find ways to make money.

31. I make my own decisions.

32. What I learn here will be important to me in the future.

SAMPLE - NOT FOR DUPLICATION (For additional copies, administrator directions, test development information, and student answer sheets, contact: EIC-NW, Halko Dr., Cedar Knolls, N.J. 07927)

Attitude Toward Classroom Atmosphere

1. I like to tell my teachers about things that happen to me.
2. My teacher(s) helps me when I do not understand something.
3. I can't ask questions in school.
4. My teacher like it if I bring in things to share.
5. I'm not very important in my classroom.
6. I sit at my desk almost all day.
7. I can choose many of the things I do during the school day.
8. I think I'm pretty important in my classroom.
9. I think my school work is not very good.
10. My teacher(s) let me ask questions in school.
11. We have very few interesting things to look at in school
12. I have to ask the teacher(s) every time I get out of my desk.
13. I think my teacher is happy.
14. My teacher(s) lets me answer lots of questions.
15. I think my teacher(s) does not like me.
16. My teacher(s) like to play games with us.
17. Even when someone is stuck with a problem, I am not allowed to help.
18. I get worried when I make a mistake at school.

19. My teacher(s) likes me.

20. We do not do very interesting things in our classroom.

21. Sometimes my teacher(s) lets me do just nothing for a while.

22. I wish I had more time to look at something besides books and worksheets.

23. Sometimes my class does work outdoors even if it isn't recess time.

24. My teacher(s) does almost all of the talking in my class.

25. We have lots of interesting things to do in our classroom.

26. My teacher(s) does not like me to bring in things to share.

27. My teacher(s) lets me help a friend if he or she is stuck with a problem.

28. I almost always have to do what everybody else in my room is doing.

29. Sometimes my friends and I work on things and the teacher(s) doesn't have to help us.

30. I think I do pretty good work at school.

Bonney-Fessenden Sociograph

PART

Description of the Sociograph
Development of the Sociograph
Reliability and Validity

DESCRIPTION OF THE SOCIOGRAPH

The *Sociograph* is a chart designed to simplify the recording and interpreting of sociometric data. All the recording spaces required in a complete sociometric appraisal have been conveniently arranged on the inside of a specially-printed manila folder.

The choices given and choices received can be plotted quickly for members of groups up to forty in number. The *Sociograph* employs one triangular-shaped graph for this. In essence, this graph is one half of the familiar square tabulation chart. By dividing each square into two halves on the *Sociograph* and by plotting data in an easily established pattern, mutual choices occur in one square, and the particular group choice-patterns are readily revealed. A circle can be drawn around mutual choices to make identification easy. This is a unique and timesaving feature of the *Sociograph*. The development of this chart is discussed on pages 4 and 5 of this Manual.

THE GRAPH

On the center portion of the folder is printed the triangular graph or chart to which reference was just made. Choices given by members are recorded on this chart and from it information regarding characteristics of the group is obtained. If desired, the order of choices and rejections can also be recorded equally conveniently.

To the left of the graph are spaces for the names of the pupils. Each name space is followed by an identification number which is also placed at the base of the columns and on the diagonal portion of the graph. The number on the diagonal is used to identify both the line and its corresponding column.[1] These numbers are used by the class members in making their responses to the sociometric questions when the special answer slip is utilized.[2]

SUMMARY COLUMNS

To the left of the name spaces are six columns in which the data recorded in the graph are summarized. Four of these columns have been given headings. They represent areas that have been found to be most important in group and individual analyses. The description of the six columns follows:

A. *Choices Given.* This column refers to the number of persons chosen by each member of the group for the specific occasion of the sociometric question. Frequently the examiner limits the number of choices the group member may make. This column will then not be used. On other occasions the number of persons to whom each member is asked to respond is left open. In these instances the examiner may feel that the number of choices has some importance for his analysis and should be totaled.

B. *Choices Received.* This column totals all choices received. No special space is provided in which to record 1st, 2nd, 3rd, etc., choices even though the question asked often requests that the group member list his preferences in this order. While it is true that first level choices have been found to be more constant than any other, a member's *relative* rank in his group will prove to be very much the same whether preferential recording is or is not used. The chief value of preferential choices to teachers or group leaders is that they serve as guides in putting members together in subgroups.

C. *Mutual Choices.* It is often valuable to the examiner to know the extent to which each person chose others who also chose him. These mutual or reciprocated choices are important in examining the status of a group as a whole, in establishing subgroups, and in appraising individual attitudes and relationships.

D. *Rejections Received.* When the members of the class or group indicate those with whom they prefer not to be associated, the number of times each person is rejected can be totaled in this column. This number may be quite indicative when compared with the choices received. Rejections are seldom made in rank order of 1st, 2nd, etc.

E. *Unnamed Columns.* Two of these are included in the *Sociograph* for summarizing other data from the chart that might be important to the examiner. Such data might be relative to the number of boy-girl choices, interracial choices, or any other cross-group choices that the examiner might wish to investigate. Often the privilege of rejecting sociometrically is given. One column can be used to indicate the numbers of rejections made. These columns can also be used to total scores, to establish rank order, to provide weighted scores, and the like.

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[1] Definitions of "line" and "column" are found on page 5.

[2] A description of an "answer slip" is found on page 5.

TOTALS

Totaling and averaging lines are provided at the bottom of each of the summary columns.

INTERPRETATION OF DATA

The right side of the folder contains, as its major feature, space in which to record whatever interpretations are to be made. Headings provided in this space include: Class Characteristics, Individual Characteristics, Groupings, and Other Conclusions.

INSTRUCTIONS

Instructions are found in two places in the folder. A brief illustrated set of instructions is found immediately to the right of the center line on the inner side of the folder. On the back cover will be found a summary of directions, uses, and interpretive guides. These directions are obviously not as detailed as those found in this Manual.

IDENTIFYING DATA

Also included is the space in which the following identifying data are recorded: Class or Grade, Date, Teacher, School, Purpose, and Question Used.

Thus the *Sociograph* is a durable form of convenient size on which data can be readily recorded. It retains all of the advantages of the sociogram and the matrix heretofore required for sociometric appraisal. With it, many useful facts about group interrelationships can easily be obtained.

DEVELOPMENT OF THE SOCIOGRAPH

Sociometric research has long employed two kinds of instruments, the square graph, or matrix, and the sociogram. This latter device was developed so that the lines of attraction or rejection between persons could be visualized more effectively. Its graphic or pictorial form has become well-known. It has, however, the disadvantages of being frequently difficult to construct, of not being subject to mathematical analysis, and of making comparisons between two or more administrations difficult. Considerable confusion may develop in tracing the lines when the group is large, when the responses are many, or when more than one question is plotted on the same chart.

Samples of these procedures are given in Jennings,[3] Moreno,[4] Northway,[5] and other references given at the end of Part 2 of this Manual.

Basically, the *Sociograph* is a square tabulation chart "folded" into a triangular shape in such a way that the squares common to two people coincide.[6] In the usual square tabulation chart, there are two squares for each pair of persons involved. In Figure 1 (in which 1st and 2nd choices have been recorded), for example, the squares in the upper right-hand corner and lower left-hand corner are common to students A and D.

		Chosen			
		A	B	C	D
Choosers	A		1		2
	B	2			1
	C	2	1		
	D		1	2	

FIG. 1. Four-Unit Square

The choices made and received can easily be noted and totaled. However, even in this small unit, the pairs of mutual or reciprocated choices do not stand out clearly enough for them to be easily identified. If the chart is "folded" as represented in Figure 2, one can readily see that there are mutual choices between students A and B and between students B and D, because the data from the common squares are now together. This process causes the *Sociograph* to be cut

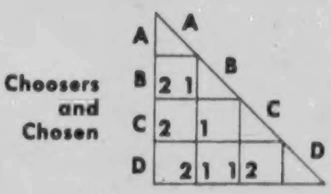

FIG. 2. "Folded" Four-Unit Square

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[3] Helen Hall Jennings, *Sociometry in Group Relations* (Washington, D.C.: American Council on Education, 1948), 85 pp.

[4] Jacob L. Moreno, *Who Shall Survive?*, Revised Edition (Beacon, New York: Beacon House, Inc., 1953) 755 pp.

[5] Mary L. Northway, *A Primer of Sociometry* (Toronto, Canada: University of Toronto Press, 1952), 48 pp.

[6] Obviously the chart has not been folded. If a square tabulation chart were folded on a diagonal from the upper left-hand to the lower right-hand corners, each square in the upper right-hand side of the diagonal would fall on a square in the lower left-hand side. These squares become mutual squares in the *Sociograph*.

diagonally on the open squares, the ones in which a person might choose himself. Inasmuch as these are not used in sociometric appraisal, they are not included as squares in the *Sociograph*.

In order to make the relationship more meaningful, it is necessary to establish a definite plan for designating who chose whom. With the *Sociograph* this is done by dividing each common square with a vertical dotted line. The left-hand halves then represent the lower left-hand portion of the original square, and the right-hand halves represent the upper right-hand portion of the original square tabulation chart. Thus, the basic unit of the *Sociograph*, represented in Figure 3, enables one to note the relationship as shown below.

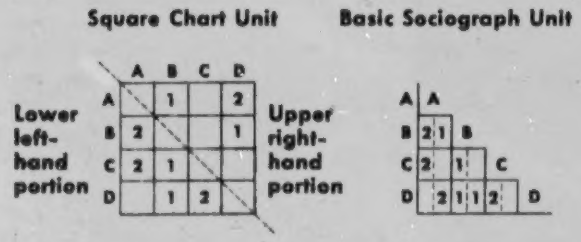


FIG. 3. Contrasting Square Chart Unit and Basic Sociograph Unit

Referring to the Square Chart Unit in Figure 3, Student A would be able to put his choices into the upper right-hand portion only. In the Basic Sociograph Unit, therefore, all of the choices he made would be noted in the right-hand half of his vertical column. His first choice was Student B; his second choice was Student D.

Again referring to Figure 3, Student B's choices would be recorded in both halves of the Square Chart Unit. Student B has one square in the lower left-hand portion of the square chart, in Student A's column, and two squares on the upper right-hand portion, those common with Students C and D. It can be noted that his first choice is Student D who is on the right-hand side of the square chart in Student B's line and is therefore represented by the right-hand side of the square common to Students B and D in the Sociograph unit. His second choice is Student A who is on the left-hand portion of the square chart and therefore represented in the left-hand side of the mutual square in the Sociograph unit.

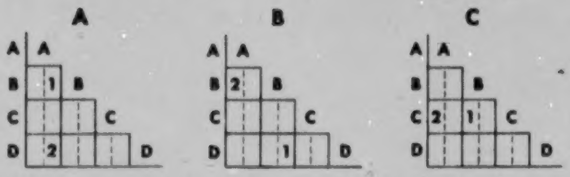
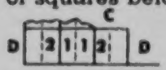
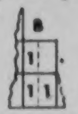
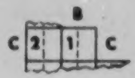


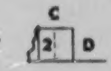
FIG. 4. Sociograph Units Illustrative of Recordings of Choices by Students A, B, and C

Figure 4 represents the recordings of choices made by each of three students. Student A's recordings are both in the vertical column. Student C's recordings are both in the horizontal line. Student B has one recording in a column and one in a line.

In this Manual the word *line* will mean the horizontal group of squares belonging to any one person such as:  A *column* will mean the vertical group of squares belonging to any one person such as: 

It will be noted, therefore, that each student, except the first and last, will have both a line and a column. C, in this instance, has a *line:*



and a *column:* 

In the *Sociograph* this principle is extended to include 40 people. Choices given are recorded in the left-hand half of the square in the line which indicates it would be in the left-hand portion of a square tabulation, and in the right-hand half of the square in the column, which indicates it would be in the right-hand portion of a square tabulation.

ANSWER SLIPS

Each *Sociograph* is accompanied by five sheets of eight answer slips which are to be separated along the perforated lines and distributed to the members of the class for use. These answer slips are simply designed and perfectly matched with the squares on the *Sociograph*. A partial reproduction of an answer slip is found in Figure 5.

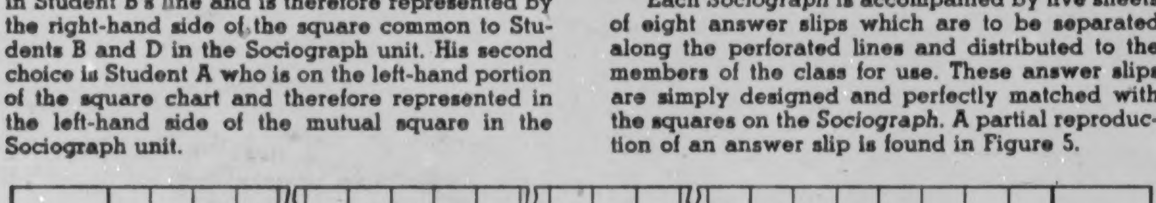


FIG. 5. An Answer Slip

RELIABILITY AND VALIDITY

THE RELIABILITY OR CONSTANCY OF SOCIOMETRIC SCORES

When confronted with the question of the reliability of sociometric scores, one is faced with a different situation than is usually found in psychological testing. Instead of measuring some quality or capacity which is presumed to remain approximately constant in the same individuals over a period of time (such as a few months, a year, or even much longer), we are, in sociometric testing, measuring the interpersonal responses of the members of a group toward each other. There are no grounds for assuming that these responses should remain entirely constant over *any* given time interval. In fact, it is to be assumed that some changes in interpersonal feelings are taking place all the time. Even over such a relatively short time interval as one month, one would expect some measurable changes to take place. This would be particularly true if some kind of socializing activities were introduced into the group being tested.

Studies which have been made on the constancy of sociometric measurements vary to some extent depending upon whether they deal with the constancy of individual-to-individual responses or the constancy of total group status based on the choices received.

The individual-to-individual responses may change considerably over a time interval as short as one month. In fact, in some populations only about thirty per cent of the total choices expended are given to the choice recipients by the same choosers on two successive testings. As would be expected, first-level preferences are found to be much more constant than lower-level preferences. In studies reported by Criswell,[7] Deutschberger,[8] and Northway,[9] first-level choices are shown to be at least twice as constant as are lower-level choices.

When turning to the constancy of relative group status based on total choices received, one finds much greater stability than in the case of individual-to-individual choosing. In surveying 20 studies which have given data on the constancy of sociometric positions over varying periods of time, it was found that in those in which the time interval was one week or less the median rank-order coefficient was .90. Representative studies in this area include those reported by McKinney,[10] Zeleny,[11] and Monton *et al.*[12]

From the above survey a good many studies were found in which the time interval between test and retest was from two to nine weeks. The median coefficient calculated from these studies proved to be .76. Representative of investigations in this area are those reported by Byrd,[13] Damrin,[14] and Northway.[15]

Finally, from the above survey some studies were found in which the interval between testings varied from three months to one year (mostly three to five months). The median coefficient determined from these studies was .65. Representative of the studies using this longer time interval are those reported by Bronfenbrenner[16] and Taylor.[17]

These figures show clearly that the stability of an individual's choice-status in his group decreases by noticeable degrees (.90-.76-.65) as the time interval between test and retest is increased. This is what should be expected since longer time periods allow more changes in interpersonal alignments to occur. Furthermore, over periods of several months or longer, many changes in the personnel of classroom groups may occur due to some pupils leaving and others coming in.

All the above data emphasize that an individual's choice-value in a particular group is characterized much more by stability than by fluctuation. A teacher may assume, therefore, that the *relative ranks* achieved by pupils in a particular sociometric appraisal are fairly representative of the ranks which they will achieve from subsequent appraisal on the same or similar criteria. It should be recognized that this stability does not necessarily result from repeated choices made by the same individuals. Frequently a real contribution of the sociometric approach is the noting of shifts of individuals from clique to clique.

THE VALIDITY OF SOCIOMETRIC SCORES

The validity of sociometric results depends upon one's point of view. From one standpoint, when pupils give honest and sincere responses to a sociometric question, it can be said that these responses have "face validity" in the sense that no one is a better judge of an individual's feelings toward others than is this individual himself. In other words, a sociometric evaluation is a *direct* measure of the kind of behavior under investigation. When the members of a group are asked to state their preferences for each other as playmates, work associates, or roommates, and they do so with honesty and sincerity, their feelings toward each other have been measured *directly* in regard to the stated criterion.

The second way of approaching the validity of sociometric results is to assume that if they are measuring something that is important or significant about human behavior, they should show some relationship with other methods of assessing personal-social adjustment. Granting that responses to sociometric measurements have "face validity," one might not be convinced that these responses have general psychological or educational significance beyond the immediate testing situation. The question then becomes: To what extent are sociometric scores valid indicators of good or poor personal-social adjustment as determined by other methods of assessment?

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[7] Joan Criswell, *A Sociometric Study of Race Cleavage in the Classroom*, Archives of Psychology, Number 235 (New York City: Columbia University, 1939), 82 pp.

[8] Paul Deutschberger, "The Tele-Factor: Horison and Awareness" *Sociometry*, 10:242-49, August, 1947.

[9] Mary L. Northway, *Appraisal of the Social Development of Children at a Summer Camp* (Toronto, Canada: University of Toronto Press, 1940), 62 pp.

[10] John C. McKinney, "An Educational Application of a Two-Dimensional Sociometric Test," *Sociometry*, 11:356-67, November, 1948.

[11] Leslie D. Zeleny, "Sociometry of Morale," *American Sociological Review*, 4:799-808, December, 1939.

[12] Jane S. Monton, Robert R. Blake, and Benjamin Fruchter, "The Reliability of Sociometric Measures," *Sociometry*, 18:7-48, February, 1955.

[13] Eugene Byrd, "A Study of Validity and Constancy of Choices in a Sociometric Test," *Sociometry*, 14:175-81, May, 1951.

[14] Dora E. Damrin, "Family Size and Sibling Age, Sex, and Position as Related to Certain Aspects of Adjustment," *Journal of Social Psychology*, 29:93-102, February, 1949.

[15] Northway, *op. cit.*

[16] Urie Bronfenbrenner, "A Constant Frame of Reference for Sociometric Research: Part II, Experiment and Inference," *Sociometry*, 7:40-75, February, 1944.

[17] Edward A. Taylor, "Some Factors Relating to Social Acceptance in Eighth-Grade Classes," *Journal of Educational Psychology*, 43:257-72, May, 1952.

This question can be answered with present evidence in regard to personality self-reporting inventories (such as the California Test of Personality),[18] teacher ratings of pupils' personal and social behavior, pupils' ratings of each other, projective devices, and observational records obtained on overt social behavior.

The research findings in regard to all of these methods of personality measurement in their relationships with sociometric data are very similar in two respects: (1) When total groups are studied, the relationships between these various methods of personality assessment and sociometric scores are not marked, but (2) when those who are high in choice-status (such as the upper fourth) are contrasted with those who are low, the findings are quite consistent in showing most frequently-chosen individuals to be reliably superior to the infrequently-chosen ones in *some* psychologically and/or socially approved types of behavior adjustments. Only in rare instances are the low-choice individuals found to be superior to the high ones in *any* desirable behavioral characteristics.

The kinds of behavior in which sociometrically high individuals are generally found to be most superior to the low ones are: extroverted interests, friendly contacts with others, positive self-regarding attitudes, congenial relationships with parents and teachers, cooperative behavior, cheerfulness and buoyancy of mood, sensitivity to the responses of others, and the absence of eccentric behavior and bizarre thought trends.

Representative studies which support the above statements are those by Baron,[19] Bonney,[20] Feinberg,[21] Hardy,[22] Kuhlen and Bretsch,[23] Kuhlen and Lee,[24] McKinney,[25] Jennings,[26] Mill,[27] Northway and Wigdor,[28] Olson,[29] and Scandrette.[30]

In a study of forty sixth-grade class groups, Gronlund[31] has found a median correlation of .59 between the estimated sociometric rankings of the pupils made by their teachers and the actual sociometric rankings obtained from pupil choices. This finding shows a substantial agreement between the teachers' judgments and the pupil choices but is obviously not high enough to warrant the assumption that teacher estimates can be substituted for sociometric data obtained from the pupils. Teachers are inclined to *overrate* the choice-status of certain students who may be outstanding in leadership roles but are nevertheless not well-liked. They are also inclined to overrate those students who display some behavior characteristics which are regarded favorably by most teachers but which are not so favorably regarded by the students. On the other hand, teachers are inclined to *underrate* the choice-status of students who do not adapt themselves well to the academic situation but who may, in some instances, be well-accepted in some of the important cliques in the school population. Most teachers do not have enough direct contact with their pupils to acquire much information in regard to their interpersonal preferences.

All the foregoing evidence bearing on what can be referred to as the second approach to validity is important to teachers because it shows that pupils (on both the elementary and secondary levels) who are frequently chosen are practically certain to be characterized by many more personal-social assets than are those who are seldom chosen. Consequently, data obtained from sociometric testing give a teacher some important clues to the level of personal-social adjustments attained by the members of a class.

These statements, however, must not be taken to mean that there is some one type of personality which is invariably found to be characteristic of either frequently-chosen or infrequently-chosen pupils. There are too many individual differences in both these categories for any one type to be clearly identified.

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[18] Louis P. Thorpe, Willis W. Clark, and Ernest W. Tiegs, *California Test of Personality* (Los Angeles: California Test Bureau, 1953).

[19] Denis Baron, "Personal-Social Characteristics and Classroom Social Status: A Sociometric Study of Fifth and Sixth Grade Girls," *Sociometry*, 14:32-42, February, 1951.

[20] Merl E. Bonney, "Personality Traits of Socially Successful and Socially Unsuccessful Children," *Journal of Educational Psychology*, 34:449-72, November, 1943.

______, *Popular and Unpopular Children*, Monograph of the American Sociometric Association (Beacon, New York: Beacon House, Inc., 1947), 81 *pp*.

______, "Social Behavior Differences between Second Grade Children of High and Low Sociometric Status," *Journal of Educational Research*, 48:481-95, March, 1955.

[21] Mortimer R. Feinberg, "Relation of Background Experience to Social Acceptance," *Journal of Abnormal and Social Psychology*, 48:206-14, April, 1953.

[22] Martha Crumpton Hardy, "Social Recognition at the Elementary School Age," *Journal of Social Psychology*, 8:365-84, August, 1937.

[23] Raymond G. Kuhlen and Howard S. Bretsch, "Sociometric Status and Personal Problems of Adolescents," *Sociometry*, 10:122-32, May, 1947.

[24] Raymond G. Kuhlen and Beatrice J. Lee, "Personality Characteristics and Social Acceptability in Adolescence," *Journal of Educational Psychology*, 34:321-40, September, 1943.

[25] McKinney, *op. cit.*, pp. 356-67.

[26] Jennings, *op. cit.*

[27] Cyril R. Mill, "Personality Patterns of Sociometrically Selected and Sociometrically Rejected Male College Students," *Sociometry*, 16:151-67, May, 1953.

[28] Mary L. Northway and Blossom T. Wigdor, "Rorschach Patterns Related to the Sociometric Status of School Children," *Sociometry*, 10:186-99, May, 1947.

[29] Willard C. Olson, "Improvement of Human Relations in the Classroom," *Childhood Education*, 22:317-25, March, 1946.

[30] Onas C. Scandrette, "Classroom Choice Status Related to Scores on Components of the California Test of Personality," *Journal of Educational Research*, 47:291-96, December, 1953.

[31] Norman E. Gronlund, "The Accuracy of Teachers' Judgments Concerning the Sociometric Status of Sixth-Grade Pupils: Second Part," *Sociometry*, 13:329-57, November, 1950.

EDUCATIONAL IMPROVEMENT CENTER
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Policy & Procedures

1973 - 1974

Research Evaluation Team for Education

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To be reviewed annually be RETE and revised following such review.

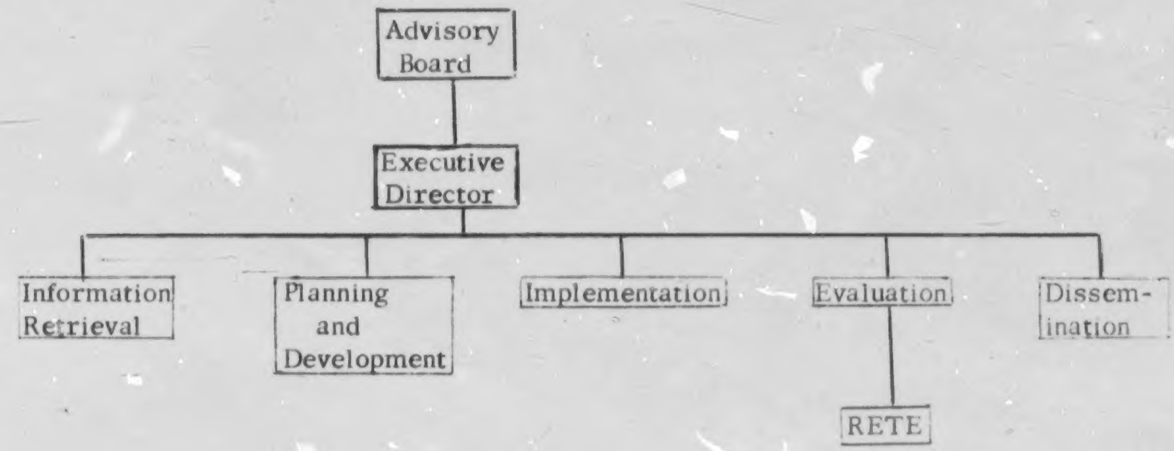
The materials presented herein were prepared pursuant to a grant from the New Jersey State Department of Education under provisions of the Elementary and Secondary Education Act of 1965, Title III. However, the opinions expressed herein do not necessarily reflect the position or policy of the New Jersey State Department of Education or the United States Office of Education.

1. PURPOSE OF RETE

The Research Evaluation Team for Education (RETE) was formed by the Educational Improvement Center of Northwest New Jersey (EIC-NW) in order to assist schools and other educational groups in (a) evaluating the effectiveness of their work, and (b) conducting research relative to their concerns.

RETE is a group of professionals who have backgrounds in education and psychology, with special expertise in testing and measurment, research design, evaluation, and/or statistical analysis. The team functions as an integral part of EIC-NW (see Figure 1), serving schools in the six county region, evaluating the work of the Center itself, and conducting special research/evaluation projects throughout the state on a no-profit agreement basis.

Figure 1


Advisory Board
Executive Director
Information Retrieval
Planning and Development
Implementation
Evaluation
Dissemination
RETE

II. CLARIFICATION OF RESEARCH/EVALUATION

RETE is designed to contribute services to ongoing projects in education, as well as to projects during the planning phase. In rendering these services, a distinction is made between research and evaluation: research involves testing hypotheses in defined settings by obtaining data within an experimental or quasi-experimental design; evaluation involves gathering data on the effectiveness of a given program or procedure, relative to previously identified goals and objectives. A more precise picture of research vs. evaluation is presented in Figure 2:

Research	Evaluation
1. Experimental or quasi-experimental design is crucial.	1. Experimental or quasi-experimental design is desirable, but not necessary.
2. Parameters defined sufficiently to permit generalization of findings to appropriate populations.	2. Parameters defined sufficiently to facilitate decision making in the specific setting.
3. Preference given to pre-post test design, with experimental and control groups desirable.	3. Control groups seldom used unless necessary for the decision making.
4. Validity and reliability of tests are crucial.	4. Validity and reliability of tests are desirable but criterion referenced tests are often more appropriate.
5. Attempt to be unobtrusive in testing.	5. May choose a reactive measure in order to facilitate a change.
6. Data withheld until final report in order to prevent change in treatment.	6. Formative feedback given.
7. Report made public.	7. Data released to the decision-makers for dissemination.

III. ROLE DEFINITIONS

In both research and evaluation, it is important that the roles and responsibilities of RETE and the client be clarified and accepted by both parties before the agreement is finalized, as outlined below.

RETE	CLIENT
1. Assist client in selecting those concerns which should be answered by the research/evaluation design.	*1. Identify all concerned groups and their probable questions.
2. Assist in stating project goals and objectives/hypotheses in measurable terms.	*2. Identify project goals and objectives/hypotheses derived from #1.
*3. Develop a research/evaluation design appropriate to the outcome of #1 and #2.	3. Examine the design for: (a) relevance to actual concerns and interests, (b) appropriateness to constraints within the setting, (c) information required by RETE to conduct the research/evaluation within the actual setting; e.g. facilities for gathering data, climate within schools, communications procedures, etc.
*4. Develop cost estimates for carrying out the total research/evaluation design; draft terms of agreement.	4. Obtain approval from funding group; sign formal agreement.
*5. Identify and/or develop appropriate instruments for obtaining data.	5. Examine instruments selected or developed by RETE and approve final format.
6. Identify sample or group to be tested.	*6. Provide data for sampling (class lists, teacher names, records, etc.).
*7. Identify methods of gathering, handling, analyzing and reporting data.	7. Examine, suggest, and reach agreement with RETE on procedural matters, i.e. how data will be gathered, who will receive both raw and analyzed data, type of report required to meet project needs, and disposition of data upon completion of the project.
*8. Schedule data gathering.	8. Communicate research/evaluation plan to target group and obtain approval at every level affected (parents, school board, etc.).
9. Administer instruments, organize and analyze data, write up report of results.	*9. Facilitate communications between RETE and specific individuals in the sample.
*10. Submit two copies of final report to client for duplication and dissemination within guidelines of initial agreement; retain copy of same for files.	10. Disseminate final report.
	11. Make decisions as to follow-up based on the results of the research/evaluation.

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* This responsibility must be performed before its corresponding activity can take place.

IV. DEVELOPMENT OF RESEARCH/EVALUATION DESIGN

As indicated in the preceding section, RETE may assist the client in developing goals, objectives, and/or hypotheses or RETE may work with those already developed by the client. In either case a written preliminary design will be developed which will include the following specifications for each goal and objective/hypothesis:

1. Performance to be measured
2. Selection of participants
3. Measurement instruments and data collection procedures
4. Data analysis techniques
5. Person(s) responsible for each aspect of the evaluation/research

This design will form the basis for agreement on the work RETE will perform and will serve as the basis for estimating costs.

RETE will attempt to identify and manage as many of the variables within the study as possible. Those variables which cannot be controlled and yet are expected to influence results will be identified along with the report of data.

Although final decision as to type of experimental or quasi-experimental design generally lies with the client, RETE will recommend a design which involves the least manipulation of and intrusion into the educational setting. However, in some cases, the planned treatment may recognize and incorporate expected effects of the evaluation process itself. In such instances, the evaluation design will be organized to facilitate such effects.

Before the selection of the design is finalized the following factors will be considered:

1. Feasibility of obtaining data within the setting.
2. Anticipated effects of the measurement process on the subjects, the setting, and the total educational experience.
3. Possible unanticipated effects (as above).
4. Availability of instruments suited to the objectives/hypotheses.
5. Time and effort required for obtaining, scoring, and analyzing data.
6. Level of measurement that can be obtained with identified instruments.
7. Statistical treatment appropriate to level of measurement.
8. Constraints imposed by both the setting and RETE resources.
9. Political implications of anticipated and unanticipated findings.
10. Miscellaneous factors within the client's community which may influence the feasibility of research/evaluation and the value of the findings to education in general.
11. Cost estimates relative to abailable funds and potential gains.

V. IDENTIFICATION AND CONSTRUCTION OF INSTRUMENTS

Instruments used by RETE to carry out a research/evaluation design will meet as many of the following criteria as possible. The point at which the decision is made to develop a measure rather than use an existing one depends on constraints of time, cost, etc. Existing instruments will not be used unless they satisfy the first four criteria. Modification of an existing instrument may be undertaken to satisfy these criteria with permission of the developer of the original instrument.

1. Content measures the objectives/hypothesis more closely than other available instruments.
2. Content and format are appropriate for use with the target population; e.g. reading level, cultural/linguistic/sex bias, length, etc.
3. Evidence of reliability.
4. Evidence of validity.
5. Level of measurement is higher than that obtained with other available instruments.
6. Practicality of administration and scoring.
7. Cost and feasibility of obtaining required number of copies.

In general, original instrument development will be in accord with procedures outlined in the Handbook on Formative and Summative Evaluation of Student Learning by Bloom, Hastings, and Mandaus. (McGraw-Hill, 1971)

VI. SAMPLING PROCEDURES

In some situations it will be both appropriate and feasible to test the entire target group. This will be particularly true in evaluation designs. In other cases it will be neither necessary nor desirable to measure the entire group. In such cases sampling procedures will be employed.

The sample size required will be estimated by using a standard formula which considers desired confidence levels, tolerable errors in estimation, and estimates of variability of the particular instrument used.

Selection of the sample will be based on those characteristics of the total population which RETE and the client identify as having probable influence on the results. In some cases, simple random sampling procedures, will be employed. In other cases, stratified random sampling procedures will be used, with the stratification based on characteristics previously identified. In general, a classroom is considered to be one unit, unless the school usually assigns children to classes on a random basis. Every effort will be made to obtain an adequate sample by using the classroom unit as one of the factors on which sampling is stratified. Data analysis procedures will treat the class scores as a single unit, unless there is statistical evidence that the classes are not significantly different from each other. In such cases, the individual score will be considered as the unit.[1]

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[1] Campbell and Stanley, Experimental and Quasi-Experimental Designs for Research, Rand McNally; Chicago, 1966.

VII. DATA COLLECTION

Data collection procedures will be scheduled within the specifications of the research/evaluation design, consistent with the following considerations:

1. Maintenance of consistent environmental and test conditions for all groups.
2. Awareness of and attempts to reduce sources of variability.
3. Maintenance of professional non-judgmental stance.
4. Maintenance of professional test and data security.
5. Development of inter-personal and inter-group trust.
6. Development and maintenance of a good image for EIC, RETE, and client.

After the sample has been identified and approval has been obtained from the client, these procedures will be followed:

1. Contact between RETE and appropriate school administrator will be made.
    a. Purposes of RETE and EIC will be explained in relation to client.
    b. Discussion of which groups should be informed of research/evaluation procedures will be initiated.
    c. Travel directions will be obtained.

2. Materials pertinent to data collection will be mailed or presented in a conference. These will include:
    a. appropriate sections of research/evaluation design
    b. RETE Policies and Procedures Statement
    c. information on specific instruments to be administered where appropriate, (a copy will be given to the administrator with a request that the test security be maintained)
    d. statement of requirements for testing -- time, personnel, supplies, environmental conditions, space, etc.
    e. presentation of alternative means of communicating with teachers, students, and parents, etc.
    f. requests for information pertinent to scheduling data collection.

3. Follow-up procedures will include:
    a. Written statements dealing with data collection procedures will be sent to the appropriate parties, delineating orientation options for target groups, test schedules and requirements, specific instruments that will be used, and RETE policies for handling both raw and analyzed data.
    b. Written acknowledgement of receipt and acceptance of section 3a will be obtained.

   c. Evaluator schedules will be arranged and the administrator will be informed of same.
   d. Evaluator will be equipped with adequate testing supplies, directions, schedules, names of school personnel involved, and other pertinent information .
   e. Evaluator will collect data.

4. Upon completion of data collection the following procedures will be observed:

   a. RETE will score, record, and analyze data analyze data according to design.
   b. Where appropriate, a follow-up letter will be sent to school personnel and students.
   c. Feedback data will be organized and/or distributed according to research/evaluation design.

VIII. DATA HANDLING

RETE will use all precautions deemed necessary to protect:

1. the confidence given by the person being measured
2. the client from release of incomplete or misinterpreted data
3. the professional ethics of RETE members
4. the reputation of EIC-NW as a supportive agency for schools
5. the data from misuse in personal or political (rather than professional) decisions.

In order to fulfill the above requirement RETE will:

1. Request that no names be attached to response sheets, unless such information is deemed necessary and appropriate for a specific research/evaluation design.
2. Assure participants that data will be reported in terms of groups only, with no specific names released if names were, if fact, obtained.
3. Release names of specific subjects along with the findings *only* in cases where:
    a. the instrument development and the testing situation warrant diagnostic interpretation
    b. the recipients of the findings are trained in proper interpretation and use of such data.
    c. the same child will be tested at a later date and the evaluator cannot easily identify the child in another way.
4. Maintain any master list which links code numbers to names. This list will be kept secure and released only according to the *a priori* agreement with the client.
5. Use an instrument only for the purposes for which it was developed or as RETE may deem appropriate following pilot testing of that instrument.
6. Analyze and report data only as indicated in the research/evaluation design. Negative findings will be reported with the same openness as positive findings.
7. Make every effort to gather information which will aid in interpreting results. Such information will be included in the *interpretation* section of the report. However, this inclusion will not alter that section which reports *findings* of the study.
8. Release data only as indicated in the a priori agreement with the client.
9. Maintain all raw data for a period of one year. This data will be stored with codes instead of names. After one year the master list with names will be destroyed, codes that identify groups will be retained (but other aspects of the code will be blotted out), and the client may then decide on the further treatment of data. Unless the client requests the raw, partially coded data within the second year, the data will be destroyed after the end of the second year.

IX. DATA ANALYSIS

Data will be processed and analyzed according to the specifications of the instruments and the appropriate aspects of the research/evaluation design. In all cases, data analysis techniques will be chosen to suit the nature of the data with respect to sample size, degree of "normality" predicted in the total population, level of measurement, and sophistication of the collection techniques and experimental design.

In general, descriptive statistics will be used. However, every effort will be made to increase the level of measurement and the power of appropriate statistical techniques. Precautions will be taken against the use of statistical treatments that are more powerful than the data warrant.

Analysis procedures that are not included in the original design and are decided upon after the collection of data can be conducted but will be reported as post facto analysis ("snoop" techniques). In general, this procedure will be avoided unless truly significant information for further study might be lost.

X. PREPARATION AND DISTRIBUTION OF REPORTS

RETE will prepare reports only for those aspects of the research/evaluation design for which RETE was designated as responsible in the a priori agreement with the client. In all cases the client is expected to communicate with RETE the expectations of the funding agency in so far as style, format and makeup of report is concerned. RETE will then follow these guidelines in development of those aspects of the report which describe RETE generated research/evaluation procedures, findings, and implications. The client will write all other aspects of the final report.

The client will receive two copies of the RETE report, suitable for duplication. A third copy will be retained by RETE. (Arrangements for duplication of the report in quantities can sometimes be made with EIC-NW on a cost basis. These arrangements must be made separately from the original contract agreement.)

Reports shall include due credit to all resources which were utilized in the research/evaluation project, i.e., authors or developers of tests, persons who facilitated the study, pertinent staff of the client's program or organization, and RETE members who participated in the study. Unless arrangements are specifically made to the contrary, RETE may duplicate and distribute the report or sections of the report to organizations or individuals who request assistance with similar research/evaluation projects or examples of the types of work done by RETE members. Copies of letters to requesting groups or the names of these groups or individuals will be regularly supplied to the client, if such an arrangement is specifically made. Arrangements may also be made with the client in which specific sections of the report are designated as "for client use only" and not for inclusion in any materials distributed by RETE.

The general principles to be followed are maintenance of professional ethics and trust between the client and RETE.

Evaluation Design

IGE - New Careers in Education

GOAL I

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will produce significant changes in student learning.

1.1 In comparison with children in control groups, students in IGE classrooms will show significantly greater achievement in reading and/or math as measured by a standarized achievement test. (Reading and/or math will be measured as appropriate to the implementation process in the specific schools in the study.)

Performance to be Measured

Student achievement in reading and/or math.

Selection of Participants

A random sample of schools will be drawn from those first and second cycle IGE schools that are implementing reading and/or math within the MUS-E design. Students will be sampled within the identified schools. A matched sample of students not attending an IGE school will be drawn to serve as a control group for the purposes of this study.

Measurement Instruments and Data Collection Procedures

Appropriate batteries of the Stanford Achievement Tests, 1973 edition, will be used to measure achievement in reading and/or math. (The subject area will be determined by the implementation process in each school in the study.) The students in both the IGE and the control groups will be tested in February, 1974, to allow for maximum exposure to the IGE/non-IGE experience.

Data Analysis Techniques

Scores from IGE and control schools will be analyzed with a *t*-test for differences between means. A second level analysis will be accomplished, using the judgments of IGE facilitators, to compare differences between schools that are highly successful in implementing IGE procedures with those that are not. Non-parametric statistics will be used to analyze these differences. A 0.05 level of significance will be utilized.

1.2 In comparison with children in control groups, students in IGE classes will demonstrate significantly more positive attitudes toward school.

Performance to be Measured

Student attitude toward school.

Selection of Participants

The same IGE and control populations that participate in the reading/math achievement testing (indicator 1.1) will participate in this aspect of the design.

Measurement Instruments and Data Collection Procedures

A RETE-developed instrument, ATCA, will be administered to measure any differences between students in IGE and control schools with respect to their attitudes toward school. The ATCA was adapted from work done at the Institute for Educational Research, Downers Grove, Illinois. (See Appendix.)

Data Analysis Techniques

Total scores will be analyzed using a t-test for differences between means. A 0.05 level of significance will be utilized.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

GOAL II

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will show characteristics which are likely to facilitate long-term commitment to the IGE process.

2.1 Expenditures will show no significant increase for start up and maintenance costs.

Performance to be Measured

Amount and use of those funds available to the building principal of an IGE-MUS-E school. (i.e., whether the school, functioning within the IGE-MUS-E design is actually more costly to operate, or whether only a redistribution of monies is required. Areas under question will include hiring of para-professionals, unit leader compensation, relased time for teachers, and instructional materials.)

Selection of Participants

All first and second cycle IGE schools as identified by the New Careers in Education Office.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each IGE building principal asking him/her to identify cost items such as those listed above as they relate to current expenses and expenses for the one year prior to IGE implementation. The instrument will be mailed to principals in spring, 1974, to allow for inclusion of data from the current academic year.

Data Analysis Techniques

Each item of the survey will be analyzed and tabulated. Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

2.2 Pupil absenteeism will show no significant increase from previous years.

Performance to be Measured

Pupil absenteeism in first and second cycle IGE schools.

Selection of Participants

Records on student populations from all first and second cycle schools will be included.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each building principal soliciting statistical data relative to pupil absenteeism both presently and prior to IGE implementation. The instrument will be mailed to principals in spring, 1974, to allow for inclusion of data from the current academic year. This form is currently under development by RETE.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

2.3 Teacher attendance and turnover will show no significant change from previous years.

Performance to be Measured

Teacher attendance/absenteeism. Incidence of teacher turnover.

Selection of Participants

Records for teacher populations from all first and second cycle schools will be included.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each IGE building principal soliciting statistical data relative to teacher attendance and turnover both presently and in the one year prior to their IGE MUS-E implementation. The instrument will be mailed to principals in the late spring, 1974, to allow for inclusion of data from the current academic year.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

2.4 LEA's will be able to assess the effectiveness of the IGE progress at the local level.

Performance to be Measured

Community support for IGE. Locally selected aspects of the RETE-NCE evaluation design.

Selection of Participants

Any LEA which is participating in the New Careers - IGE project and has not been designated as participating in the RETE-NCE evaluation design.

Measurement Instruments and Data Collection Procedures

Names, sources, and background information on instruments RETE will employ, as well as an instrument appropriate to measurement of community attitudes toward IGE, will be included in an evaluation procedures packet. This packet will be made available through the New Careers in Education Office. All or part of this packet may be employed by the LEA's at their discretion.

Data Analysis Techniques

Analysis techniques employed will be determined by the LEA, with guidelines supplied in the packet.

Person(s) Responsible for Evaluation

To be determined by the individual LEA's.

GOAL III

Goal: A system will be developed and operative whereby the implementation process of IGE can be monitored and expanded by the New Careers in Education Office.

3.1 75% of IGE league members who request assistance from the New Careers in Education Office will indicate that the NCE Office did provide assistance that was appropriate to their problem.

Performance to be Measured

Assistance provided by the New Careers in Education Office to IGE league members.

Selection of Participants

All members of the IGE leagues will be asked to provide feedback data with respect to assistance received from the New Careers in Education Office.

Measurement Instruments and Data Collection Procedures

A data collection form developed by RETE will be used by the NCE Office to obtain appropriate feedback from league members.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office

3.2 80% of the areas of concern reported to facilitators and recorded on the school visitation summary will be followed through by the New Careers in Education Office with appropriate action at the HUB or league level.

Performance to be Measured

Response by the New Careers in Education Office to facilitator reports.

Selection of Participants

Personnel in IGE schools who relate their concerns to league faciltators.

Measurement Instruments and Data Collection Procedures

School visitation summary forms completed by league facilitators will be used to record the concerns communicated to them by IGE school personnel. Evidence of action taken will be documented in NCE Office records.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

3.3 75% of the principals from IGE schools will indicate at least three specific examples of how a facilitator helped in the implementation of this program.

Performance to be Measured

Facilitator assistance to ~~principals of~~ IGE schools with respect to the IGE MUS-E implementation process.

Selection of Participants

All principals of IGE schools will be asked to provide examples of facilitator assistance in the implementation process.

Measurement Instruments and Data Collection Procedures

Feedback forms developed by RETE will be mailed to IGE school principals to solicit appropriate feedback information.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

3.4 Each league chairman will be able to indicate at least two specific examples of how a HUB meeting helped solve a specific problem for him.

Performance to be Measured

Effectiveness of HUB meetings as problem-solving vehicles for league chairman.

Selection of Participants

All league chairman will be asked to provide feedback data on HUB meetings.

Measurement Instruments and Data Collection Procedures

A data collection form developed by RETE will be used by the NCE Office to solicit appropriate feedback from league chairman, following HUB meetings.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

GOAL IV

Goal: 100% of the 15 third cycle school districts undergoing a clinical training approach will meet minimum IGE implementation criteria June, 1975.

4.1 By October 30,1973, at least 15 school districts will request to take part in a pre-clinical workshop.

Performance to be Measured

Number of school districts requesting to participate in a pre-clinical workshop.

Selection of Participants

N.J. school districts that select themselves by requesting to participate.

Measurement Instruments and Data Collection Procedures

Records of request coming into the New Careers in Education Office.

Data Analysis Techniques

Total number of request will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.2 By December 31, 1973, at least 15 school districts will have submitted a formal application with documentation evidence and will have met the standards of the New Careers in Education Office for IGE participation.

Performance to be Measured

Number of school districts submitting formal application and documentation evidence and meeting standards of the New Careers in Education Office for IGE participation.

Selection of Participants

N.J. school districts that select themselves by following application procedures and meeting NCE criteria for IGE participation.

Measured Instruments and Data Collection Procedures

Records of application procedures and criteria for IGE participation as maintained by the NCE Office.

Data Analysis Techniques

Total number of applicants who meet minimum criteria will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.3 By the end of the clinical workshop, 100% of the principals and unit leaders will score 80% or higher on a test of IGE knowledge and skills.

Performance to be Measured

Knowledge of IGE application and skills.

Selection of Participants

Pricipals and unit leaders identified by their respective school districts to participate in a clinical workshop.

Measured Instrument and Data Collection Procedures

The IGE Cncepts Test by Mary Quilling and Juanita Sorenson from the Wisconsin Research and Development Center for Cognitive Planning will be administered by personnel from the New Careers in Education Office. Each section of the instrument will be used to ascertain knowledge acquired during a corresponding module of the ten day clinical workshop.

Data Analysis Techniques

Subtest scores for each workshop participant will be totaled to determine the level of mastery achieved by each principal and unit leader, and the percentage of correct answers will be calculated. The percent of participants who score 80% or higher will be determined.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.4 By the end of their clinical experience, all participating schools will have met the first two criteria for an IGE school and will have evidence that they are working toward the third criterion.

Performance to be Measured

Satisfaction of criteria as a Multi-Unit School (MUS-E) on the organizational level, including a functioning Instructional Improvement Committee (IIC). Evidence of movement toward implementing IGE in at least one subject area.

Selection of Participants

Schools whose personnel have participated in the clinical workshop.

Measurement Instruments and Data Collection Procedures

Facilitator school visitation summaries and observations will be used to validate the schools' satisfaction of the above stated conditions.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

GOAL V

Goal: By June 1975, seven middle schools will meet minimum IGE implementation criteria.

5.1 By July 1, 1973 at least seven middle schools will request to take part in a pre-clinical workshop.

Performance to be Measured

Number of school districts requesting to participate in a pre-clinical workshop.

Selection of Participants

N. J. school districts that select themselves by requesting to participate.

Measurement Instruments and Data Collection Procedures

Records of requests coming into the New Careers in Education Office.

Data Analysis Techniques

Total number of requests will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

5.2 By September 30, 1973 at least seven middle schools will have submitted a formal application with documentation evidence, and will have met the standards of the New Careers in Education Office for IGE participation.

Performance to be Measured

Number of school districts submitting formal application and documentation evidence and meeting standards of the New Careers in Education Office for IGE participation.

Selection of Participants

N. J. school districts that select themselves by following application procedures and meeting NCE criteria for IGE participation.

Measurement Instruments and Data Collection Procedures

Records of application procedures and criteria for IGE participation as maintained by NCE Office.

5.3 By the end of their clinical workshop, 100% of the principals and unit leaders will score 80% or higher on a test of IGE knowledge of application and skills.

Performance to be Measured

Knowledge of IGE application and skills.

Selection of Participants

Principals and unit leaders identified by their respective school districts to participate in a clinical workshop.

Measurement Instruments and Data Collection Procedures

The IGE Concepts Test by Mary Quilling and Juanita Sorenson from the Wisconsin Research and Development Center for Cognitive Learning, adapted by RETE for use with middle schools, will be administered by personnel from the New Careers in Education Office. Each section of the instrument will be used to ascertain knowledge acquired during a corresponding module of the ten day clinical workshop.

Data Analysis Techniques

Subtest scores for each workshop participant will be totaled to determine the level of mastery achieved by each principal and unit leader and percent of mastery will be calculated. The percent of participants scoring at the 80% level or above will be calculated.

Person(s) Responsible for Evaluation

Designated personnel from the New Careers in Education Office.

5.4 By the end of their clinical experience, all participating schools will have met the first two criteria for an IGE school and will have evidence that they are working toward the third criterion.

Performance to be Measured

Satisfaction of criteria as a Multi-Unit School (MUS-E) on the organizational level, including a functioning Program Improvement Council (PIC). Evidence of movement toward implementing IGE in at least one subject area.

Selection of Participants

Schools whose personnel have participated in the clinical workshop.

Measurement Instruments and Data Collection Procedures

Facilitator school visitation summaries and observations will be used to validate the schools' satisfaction of the above stated conditions.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

APPENDIX A

LETTERS OF TRANSMITTAL

RETE Survey Instrument

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

As you know, your school has been identified as one of those IGE schools which will be participating in the 1973-74 IGE evaluation study. This design was developed by the Research Evaluation Team for Education (RETE) in cooperation with the New Careers in Education Project. Every effort was made to meet the needs of the project and its Title III requirements as well as those of the individual schools whose boards of education and communities have been asking for hard data on IGE outcomes.

We will be testing a sample of students in your school in both the affective and cognitive domains and then comparing their scores as a group with those of students in non-IGE control schools. The purpose is to determine if indeed there is a statistically significant difference between the two groups. (At no time will individual scores be singled out for consideration.) RETE will administer the test instruments which are Attitude Toward Classroom Atmosphere (ATCA), a pencil and paper inventory (administration time - approximately 30 minutes), as well as appropriate batteries of the Stanford Achievement Test, 1973 edition. Reading and/or math batteries will be used, (administration time of 65 and 50 minutes respectively) depending on the implementation process in your school as indicated in the New Careers Pertinent Data Bulletin.

In order to accomplish this testing with minimal disruption to you, your staff and your students, I am asking you to return the following information to me by February 1. It is most important that I receive it by that date so that testing can be scheduled for sometime in February.

Research Evaluation Team for Education

1) A roster of students in your school who are between eight and ten years old and are in their second or third year of school beyond kindergarten. Please list them according to this format:

Name   Age   Year in School beyond Kindergarten   Unit Leader

2) A list of those dates when testing cannot take place in your school (e.g. school vacations, etc.)

3) A time schedule, indicating your school hours, lunch times, special teachers, etc. i.e. those regular times when testing would be unmanageable.

4) Travel directions to your school building from the most convenient major artery.

I will be getting in touch with you during the first week in February to finalize the testing schedule.

Thank you for your cooperation.

Sincerely yours,

Diane D. Weintraub

DDW/kdb

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

February 4,1974

The New Careers in Education Project has contracted with the Research Evaluation Team for Education (RETE) of the Educational Improvement Center/NW to design and implement this year's evaluation of IGE (Individually Guided Education) in the Multi-Unit School (MUS-E).

The evaluation is based on a control group design, with thirty-three IGE schools being matched with non-IGE schools that are comparable in student enrollment, staff size and equalized valuation of the community.

The focus of the evaluation is student outcomes in both the affective and cognitive domains. As is the case with any educational innovations, we are ultimately interested in what differences a new program will make for students. I am, therefore, asking you to cooperate with us by participating in the study as a control school.

Specifically, a RETE person will come into your school and test between ten and twenty-five students. These children will be selected at random by our test administrator at the time of testing, using a table of random numbers and your school roster of second and third graders. This testing must be completed by March 1.

Testing will take approximately 1½ hours and will include the following instruments:

1. Attitude Toward Classroom Atmosphere (ATCA) This is a pencil and paper inventory which RETE has developed, based on work done in a Title III project in Downers Grove, Illinois. It consists of 30 statements with which the student may agree or disagree.

2. Stanford Achievement Test, 1973 edition. RETE will administer either the reading or mathematics battery, depending on the IGE implementation process in your matching school.

Research Evaluation Team for Education

Let me assure you that strictest confidence of data will be maintained. Neither individual students nor schools will be identified at any time by name. Rather data analysis and reports will combine data from all control schools for comparison with data from all IGE schools. It is only through the cooperation of educators such as yourself that responsible research can take place in "real world" settings, supplying those who make educational decisions with the best possible information.

Please respond by returning the section below as soon as possible. I will be getting in touch with you shortly to make more specific arrangements. If you have any questions feel free to contact me at the Center.

Sincerely yours,

Diane D Weintraub

Diane D. Weintraub

- -

School ______________________________

Address ____________________________

____

Phone ______________________________

Principal ___________________________

____ We will participate in the RETE evaluation of the IGE/MUS-E program.

____ We will not participate in this study because ________________________________

____

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

Memo to principals:

As per our recent telephone conversation, I am sending you the below identified materials which you will require for proper implementation of student testing within the IGE evaluation design.

_____ a list of students who were randomly sampled from your IGE unit rosters. Included are several alternate names to be used in the order listed in the event that one or more of the identified sample is absent.

_____ an outline of the simple random sampling procedure you should use to identify students to be tested in your school

_____ administrator instructions for the Piers-Harris Self-Concept Scale

_____ Piers-Harris Self-Concept Scale test booklets

_____ administrator instructions for the Stanford Achievement Test

_____ Stanford Achievement Test booklets from which you should use only the tests indicated:

_____ Reading
- ____Vocabulary (Test 1)
- ____Reading (Test 2, Parts A & B)

_____ Mathematics
- _____ Math concepts (Test 4)
- _____ Math computation (Test 5)

_____ a testing log to be completed and returned to me along with the test instruments

As I indicated to you, testing should take place on two consecutive mornings during the week of March 4 - 8. It is important that you administer the Piers-Harris on the first day followed by the Stanford on the next day. It is preferable that both testing sessions take place in the same setting with the same examiner.

We are asking that the students put their names on both instruments so that we might investigate a possible correlation in scores on the two instruments. Thus the same students should complete both instruments. Let me assure you that at no time will any individual data be released.

I would appreciate your returning all test materials promptly following testing. I will anticipate receipt of all such materials by Wednesday, March 13.

THANK YOU.

Research Evaluation Team for Education

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

TESTING LOG

To the principal: Please fill out this form and return to me with the completed test materials.

School: ____________________________

Address: ____________________________

Principal: ____________________________

	Piers-Harris Self-Concept Scale	Stanford Achievement Test Circle: Reading Math
Date of Testing		
Time of Testing		
Test Administrator		
Number of students tested		

Did you encounter any difficulties implementing the random sampling procedure?

No _____ Yes _____

If yes, please indicate: ____________________________

____

Where there any unusual conditions or circumstances which may have affect the testing?

No _____ Yes _____

If yes, please indicate: ____________________________

____

Additional Comments:

____

____

____

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

I am pleased to report to you that the collection of student data for the evaluation of the IGE/New Careers in Education Project has been completed. I want to thank each of you for the cooperative effort that went into the expediting of the necessary testing in view of the gasoline crisis that sharply curtailed our field activities. It was my pleasure to speak with each of you on the phone and find you so receptive to dealing with the situation at hand. I would welcome any opportunity to meet the people behind the voices.

RETE is presently scoring and analyzing the data generated by the instruments. Some 800 students participated in the two testing sessions, so the task is quite massive. Feedback will not be available before May 1, at which time the data will be reported in terms of the experimental and control groups, with no individual students or schools being identified.

Again, our gratitude goes to you and to your staff.

Cordially,

Diane D. Weintraub
Diane D. Weintraub

Research Evaluation Team for Education

EDUCATIONAL IMPROVEMENT CENTER
of
NORTHWEST NEW JERSEY

halko drive
cedar knolls, n. j. 07927
201-539-0331

Dear IGE Principal:

School districts considering implementation of IGE/MUS-E need information on both start-up and maintainence costs. The following form has been designed to elicit such information from you in as succinct a form as possible. Your cooperation in completing the appropriate sections promply will be greatly appreciated.

If your school began implementation this year (i.e. September, 1973), complete only the sheet headed "Start-up." If your school is into the second year of implementation or beyond, please complete both pages, i.e. "Start-up" and "Maintainence." Please estimate as closely as you can and respond to each question fully.

Where indicating changes, include only those that are directly associated with the IGE/MUS-E implementation. Those that reflect school policy, conditions in the community, inflation, etc., are not relevant here.

In order for a summary of this cost data (no schools will be identified by name) to be included in the RETE report for New Careers in Education, we must receive your completed forms by Friday, May 10. Thank you for your cooperation.

Implementation/Maintenance Costs - IGE/MUS-E

Descriptive Information

1. Person completing this form

Name ______________________ Position ______________________

Name of School ______________________ School district ______________

Address ______________________ Phone ______________________

____

____

2. How many elementary schools are there in your district? ______

3. Of these, how many are implementing IGE/MUS-E as of school year 1973-1974? ______

4. Check the school year in which your school building first implemented IGE/MUS-E.

_____ 1971-72 ______ 1972-73 ______ 1973-74

5. What degree of autonomy do you (and your IIC) have in the following budget areas:

	no				complete
Instructional materials	1	2	3	4	5
Equipment	1	2	3	4	5
Staff positions	1	2	3	4	5

Research Evaluation Team for Education

START-UP COSTS

Category	(Check one) Increase	Remain the same	Decrease	Amount of Change(Complete the appropriate column) Number	Cost $
1. Certified teachers					
2. Paid paraprofessionals					
3. Special area teachers (art, music, phys. ed, etc.)					
4. Unit leader compensation (beyond usual salary increments)					
5. Release time for teacher in-service training					
6. Materials/consultants for in-service training					
7. Per pupil expenditure					
8. Materials that are consumed					
9. Materials having relatively long life-expectancy					
10. Equipment					
11. Remodeling of plant					
12. Furnishings (e.g. desks, cabinets, tables, etc.)					
13. Custodians					
14. Other (please specify)					

The following changes (if any) should be indicated by %:

Category	Increase	Remain the same	Decrease	Approximate % change
1. Teacher turnover				
2. Teacher absenteeism				
3. Pupil absenteeism				

MAINTENANCE COSTS

Category	(Check one)			Amount of Change(Complete the appropriate column)	
	Increase	Remain the same	Decrease	Number	Cost $
1. Certified teachers					
2. Paid paraprofessionals					
3. Special area teachers (art, music, phys. ed, etc.)					
4. Unit leader compensation (beyond usual salary increments)					
5. Release time for teacher in-service training					
6. Materials/consultants for in-service training					
7. Per pupil expenditure					
8. Materials that are consumed					
9. Materials having relatively long life-expectancy					
10. Equipment					
11. Remodeling of plant					
12. Furnishings (e.g. desks, cabinets, tables, etc.)					
13. Custodians					
14. Other (please specify)					

The following changes (if any) should be indicated by %:

Category	Increase	Remain the same	Decrease	Approximate % change
1. Teacher turnover				
2. Teacher absenteeism				
3. Pupil absenteeism				

APPENDIX B

FORMULAE AND TECHNICAL INFORMATION

FORMULAE:

A. t-test (uncorrelated data)

1. separate variance t model:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

2. pooled variance t model:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\frac{(n_1 - 1)\, s_1^2 + (n_2 - 1)\, s_2^2}{n_1 + n_2 - 2} \qquad \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

B. F ratio

$H_0: \sigma_1^2 = \sigma_2^2$

$$F = \frac{S_g^2}{S_l^2}$$

where

F= the value by which variance homogeneity will be tested

S_g^2 = the greater/larger sample variance

S_1^2 = the lesser/smaller sample variance

degrees of freedom = $\left[(n - 1)_{\text{larger}},\ (n - 1)_{\text{smaller}} \right]$

C. Selecting the t model and degrees of freedom

1. When $n_1 = n_2$ and $\sigma_1^2 = \sigma_2^2$

   Use separate or pooled variance formula with degrees of freedom equal to $n_1 + n_2 - 2$ (Both formulas are algebraically equivalent when $n_1 = n_2$)

2. When $n_1 \neq n_2$ and $o_1^2 = o_2^2$

   Use pooled variance formula with degrees of freedom equal to $n_1 + n_2 - 2$

3. When $n_1 = n_2$ and $o_1^2 \neq o_2^2$

   Use pooled variance formula or separate variance formula with degrees of freedom in each instance equal to $n_1 - 1$ or $n_2 - 1$. (Do not use df = $n_1 + n_2 - 2$)

4. When $n_1 \neq n_2$ and $o_1^2 \neq o_2^2$

   Use separate variance formula with tabled t value for a given level of significance determined by averaging t values for (a) degrees of freedom equal to $n_1 - 1$ and (b) degrees of freedom equal to $n_2 - 1$.

Stanford Achievement Tests

Administrator Directions

Stanford Achievement Test

Alert: The test booklets you have received include several tests. You are to administer only those checked below:

_____ Reading

_____ Test 1: Vocabulary - 20 minutes

_____ Test 2: Reading Part A - 20 minutes
- Part B - 25 minutes

_____ Mathematics

_____ Test 4: Mathematics Concepts - 20 minutes

_____ Test 5: Mathematics Computation - 30 minutes

The time allotments given are for actual test-taking time only. In your scheduling you should allow for a rest period, start-up time, directions, etc.

Materials

Administrator directions
Test booklets
Pencils (All students should be provided with #2 pencils since these tests will be scored by machine.)
Timing device (wall clock is fine)

Procedure

1. Before giving the tests, go over both the administrator directions and the test booklets so that you will feel comfortable with the whole procedure.

2. Check the conditions of the testing environment, e.g. adequate number of chairs (well-spaced), comfortable writing surface, adequate lighting, room temperature, etc.

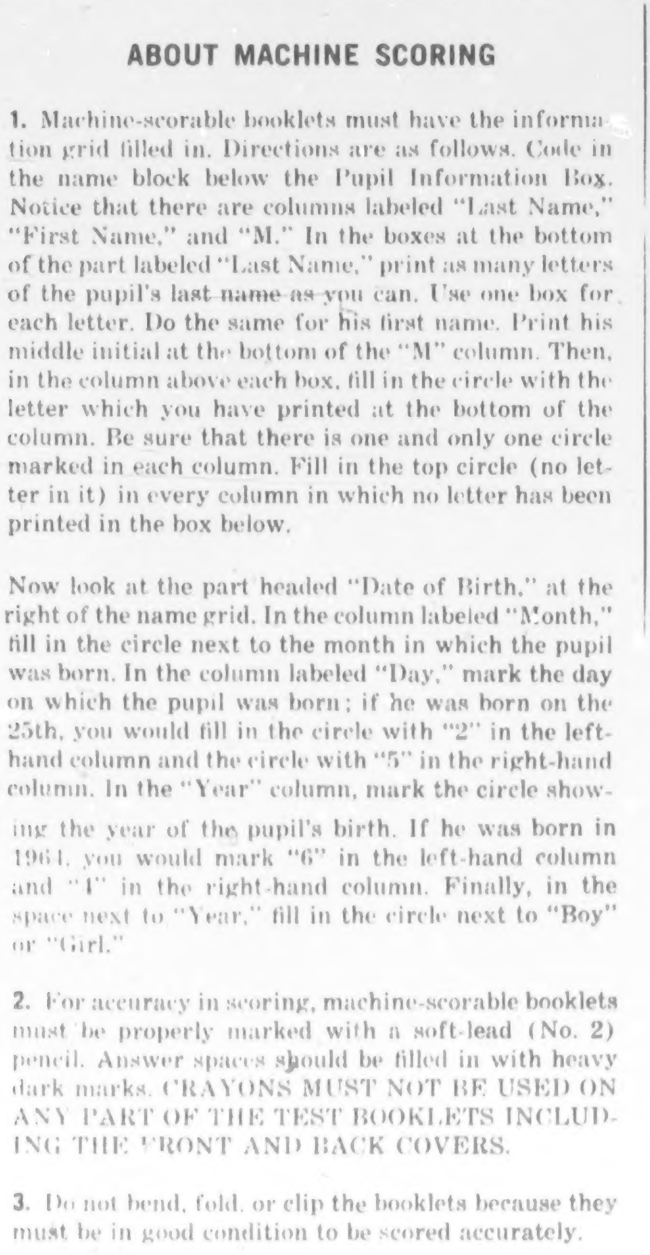
3. Be prepared with extra pencils

4. Before distributing the test booklets, you should explain to the children that: "This set of tests is part of the same project that we talked about yesterday. Once again there are many different children all over New Jersey who are taking the same tests. Today's test is different from yesterday's however, in that this one deals with things you have learned in school.

"I'm going to give each of you a booklet which has many interesting things in it for you to do. Do not open the book or mark on it until I tell you to do so."

Pass out booklets.

"Please turn the booklets over so you can fill in your name and other such information." Show the students the back of your booklet. Guide them through the completion of the Pupil Information Box. Since these booklets will be machine scored, please have them complete the computer information grid according to these directions:



ABOUT MACHINE SCORING

1. Machine-scorable booklets must have the information grid filled in. Directions are as follows. Code in the name block below the Pupil Information Box. Notice that there are columns labeled "Last Name," "First Name," and "M." In the boxes at the bottom of the part labeled "Last Name," print as many letters of the pupil's last name as you can. Use one box for each letter. Do the same for his first name. Print his middle initial at the bottom of the "M" column. Then, in the column above each box, fill in the circle with the letter which you have printed at the bottom of the column. Be sure that there is one and only one circle marked in each column. Fill in the top circle (no letter in it) in every column in which no letter has been printed in the box below.

Now look at the part headed "Date of Birth," at the right of the name grid. In the column labeled "Month," fill in the circle next to the month in which the pupil was born. In the column labeled "Day," mark the day on which the pupil was born; if he was born on the 25th, you would fill in the circle with "2" in the left-hand column and the circle with "5" in the right-hand column. In the "Year" column, mark the circle showing the year of the pupil's birth. If he was born in 1961, you would mark "6" in the left-hand column and "1" in the right-hand column. Finally, in the space next to "Year," fill in the circle next to "Boy" or "Girl."

2. For accuracy in scoring, machine-scorable booklets must be properly marked with a soft-lead (No. 2) pencil. Answer spaces should be filled in with heavy dark marks. CRAYONS MUST NOT BE USED ON ANY PART OF THE TEST BOOKLETS INCLUDING THE FRONT AND BACK COVERS.

3. Do not bend, fold, or clip the booklets because they must be in good condition to be scored accurately.

If you prefer, you may have someone in your office fill in all of this information prior to testing, in which case you would distribute the booklets by name. Another alternative would be to have the children complete the Pupil Information Box themselves and then have a secretary transfer the information to the computer box. You may implement this process in the most convenient manner for you and your students.

Now turn your booklet over so that the picture on the cover is on top.

For Reading

Machine-scorable booklets require that pupils' names be entered at the top of the even-numbered pages. Directions for this appear throughout the test and are marked with an asterisk. When using hand-scorable booklets, ignore these directions.

FIRST HALF DAY

Before Beginning the Test

1. To assure quiet and freedom from interruptions, post the "Testing Do Not Disturb" sign on the door.

2. Seat pupils in such a way as to prevent them from helping each other. Otherwise, a true picture of pupil achievement or pupil difficulties cannot be obtained.

3. Be sure that the desks are cleared and that each pupil has one or two soft-lead pencils (No. 2).

4. Be sure you have a test booklet for each pupil and an extra booklet for yourself to use when demonstrating directions, along with these *Teacher's Directions for Administering.*

5. In order to time tests accurately you should have a stopwatch or a watch or clock with a second hand.

First Testing Period

TEST 1: Vocabulary

SAY to the pupils:

> **I am going to give each of you a booklet which has many interesting things in it for you to do. Do not open the book or mark on it until I tell you to do so.**

Pass out the booklets, making sure that each child gets the booklet with his name on it. THEN SAY:

> **Turn your booklet over so that the picture on the cover is on top.**

Hold up a booklet and point to the picture. THEN SAY:

> **First, we're going to see how many words you know. Open your book and fold the cover back, like this, so that only page 2 is showing. See the 2 at the bottom of the page. Now look at the top of page 2.* Write your name at the top of the page where it says "Name."**

Hold up a booklet and point to the name blank. Give help in following these instructions to any pupils who need it. THEN SAY:

> **Put your finger on the box called "Sample" at the top of the page. It says, "puppy, kitten, cub."**

Point to the sample in your own booklet or copy it on the board and point to the board. Check to see that all children have located the sample. THEN SAY:

> **I will read part of a sentence, followed by three words. You will try to figure out which one of these three words completes the sentence. Ready? "A baby cat is a —puppy, kitten, cub." Which word best completes the sentence?**

Wait for the class to answer.

> **Yes, "kitten," and you can see that the space under "kitten" has been marked.**

On the board, show pupils how to mark an answer space. Make sure all children know what to do. THEN SAY:

> **Right below this box is line number 1. We will do this line and the others on this page the same way as the sample. I will read part of a sentence, followed by three words or groups of words, and repeat the sentence and the words once. One of the words or groups of words will give you the answer that completes the sentence correctly. You will mark the answer space under the word (or group of words) you choose as the right answer.**

TEST 1: Vocabulary (Continued)

Be sure to read each item number: then read each sentence and the option words exactly as stated and repeat once. Occasionally remind the children to mark the answer space. Pause about ten seconds before going on to the next item.

Proceed deliberately but steadily. Usually the children will need no more time than is provided by a steady double-reading of each item. The purpose of reading each item twice is to give them ample opportunity to follow the sequence of three words and to locate the correct word. Continue through the entire test, encouraging the pupils to do the best they can, even though the words may seem difficult.

1 If you stay overnight, you stay until
evening tomorrow dinner

2 A thief is a person who
spies steals thinks

3 To go on is to
continue concern consist

4 A chore is a small
job business river

5 Someone who is polite has good
luck wishes manners

6 If an answer is exact, it is
a guess just right difficult

7 A ton is a measure of
weight time power

8 If the way a person acts is odd, it is
regular natural strange

9 Foolish talk or action is
debate cleverness nonsense

10 If you obtain a reward, you
hate it lose it get it

11 A grave danger is
unimportant serious routine

12 Words saying you are sorry are
an apology a defense a pardon

13 A large, flat dish for serving food is a
bowl mug platter

14 If two things are connected, they are
separated joined divided

15 To sprout means to begin to
shower drip grow

16 A bundle is a
package pair barrel

17 If you're uncertain, you're not
trusted willing sure

18 Velvet is a kind of
cheese vegetable cloth

Now go to number 19 at the top of the next column.

Make sure all pupils have the right place.

19 If you ruin something, you
organize it wreck it collect it

20 Beware means be
afraid careful bold

21 If someone is very rude to you, you are
insulted amused gratified

22 To be ready is to be
late prepared started

23 Something which occurs
wins happens hides

24 A careless person is
thoughtless worried neglected

25 To make something is to
produce it cancel it imagine it

26 To injure is to
take it get well do harm

27 A person who sees something happen is a
reporter speculator witness

28 If you stop for a while, you
retreat pause leave

29 A place where grain is ground is a
silo mill factory

30 To brag is to be
boastful cruel shy

31 The girl who does about as well as everyone else is
unusual average special

32 A piece of work to be done is a
punishment force task

TEST 1: Vocabulary (Continued)

33 If you keep something from happening, you
invent it   prevent it   accept it

34 Success in a contest is a
destruction   failure   victory

35 Another word for purchase is
buy   lose   sell

36 Land that will grow nothing is
fertile   barren   productive

37 A place to keep dogs is a
kennel   cave   fence

Ten seconds after reading the last item, SAY:

> STOP! Put your pencil down. Close your booklet so that the picture on the cover is on top.

Give the children a rest period of from five to fifteen minutes; then continue with the direction for Test 2: Reading, Part A.

Second Testing Period

TEST 2: Reading -- Part A

SAY to the pupils:

> Now open your booklet again and turn to page 3. Fold the cover back, like this, so that only page 3 is showing.

Demonstrate. Make sure that all children have the correct page. THEN SAY:

> We are going to look at some pictures and find the words that tell what each picture is. Look at the sample at the top left-hand side of the page. Put your finger on the picture of the apple.

Point to the sample in your booklet.

> Notice that there are three lines of words below the picture. You are to mark the space under the one word in each line that goes with the picture. In each line there are three words. One of these words tells you something about the picture of the apple. Mark the space under the right word. Read the words to yourself while I read them aloud. In line A, the words are "this,milk,apple." Which word tells what the picture is about?

Wait for the class to answer.

> Yes, the last word,"apple." The space under it has been marked.
> Now put your finger on the next line,B. The words are "eat,cat,each." Which word tells something about the picture of the apple?

Pause.

> Yes, the first word,"eat,"so mark the space under the word "eat."
>
> Now put your finger on the next line,C. The words are "flour,foot,fruit." Which word tells something about the picture?

Pause.

> Yes, the third word,"fruit,"so mark the space under the word "fruit."
>
> You will mark your answers for all the other pictures on this page and the next page in the same way. Mark the space under the word in each line that tells what the picture is about.
>
> Does everyone know what to do with the words and pictures? First look at the picture. Then look at the words under the picture and read them to yourself. Do not say the words aloud. In each line, find the one word that tells what the picture in the box is about, and mark the space under the word. Begin with the picture in the next box and go down the column. When you finish this column, go to the right-hand column. Work down the page like this.

Point to your own booklet.

> When you finish this page, turn it over and fold it back and go on to the next page, page 4. Keep working until you come to the bottom of page 4, where it says"STOP." Then put your pencil down and wait.

Demonstrate, and point to the word "STOP."

> If you are not sure which word tells what the picture is about, do the best you can. Do you have any questions about what you are to do?

Pause.

> Ready? GO!

Record the STARTING time on the board or on note paper. Give no further help on specific questions Walk quietly about the room to find any children who do not know how to mark their answers, and to make sure that all go on to page 4 but do not turn to page 5.

🕓 After 20 minutes, SAY:

STOP! *Now write your name at the top of the page, where it says "Name."

Point to the name blank in your own booklet. When all have written their names, SAY:

> Now close your booklet and put your pencil down.

Third Testing Period

TEST 2: Reading -- Part B

SAY to the pupils:

> *Now open your booklet to page 6. Look at the top of page 6. Write your name in the box where it says "Name."

Be sure that every pupil writes his name. THEN SAY:

> Now turn to page 5 and fold the pages back, like this, so that only page 5 is showing.

Demonstrate. See that all children have the right page. SAY:

> Look at the sample box at the top left-hand corner of the page. The samples show you what to do on this page and the next two pages. The story for Sample A reads: "We saw a happy boy and a sad girl. The girl was--" What the girl was doing is named in one of the four words just below this part of the story, beside the letter A. The words are: "crying, flying, purple, asleep." Which word after the letter A tells what the girl was doing?

Pause.

> Yes, the word is "crying," so the space under "crying" has been marked.
>
> The next part of the story says, "but the boy was--sick, laughing, hurt, angry." Which word after the letter B finishes the sentence correctly?

Pause.

> Yes, the word "laughing" is best, so mark the space under "laughing."

Check to see that all do this correctly. THEN SAY:

> Now you are going to do the rest by yourself. Look at each box and read the sentences. Each time you come to a line that starts with a number, choose the one word in that line that makes the most sense and mark the space under it.

Make sure everyone understands what to do. If necessary, explain again. THEN SAY:

> Begin with the next box and go down the column. When you finish this column, go to the right-hand column. Work down the page like this.

Point to your own booklet.

> When you finish this page, turn to page 6 and fold the booklet back so that only page6 is showing. Go on working until you come to the bottom of page 6. Then turn your booklet over to page 7 and keep on working until you come to the bottom, where it says "STOP." Then put your pencil down and wait.

Demonstrate, and point to the word "STOP."

> Do you have any questions about what you are to do?

Pause.

> Ready? GO!

Record the starting time. Watch carefully to see that the children go on to pages 6 and 7 but do not turn to page 8. If necessary, give help in turning to pages 6 and 7.

After 25 minutes, SAY:

> STOP! Close your booklet and put your pencil down.

Directions for Administering Word Study Skills--
Mathematics Concepts Form A

TEST 4: Mathematics Concepts

SAY to the pupils:

> I am going to give you your booklet. Don't open it or mark on it until I tell you to. Today we are going to do some work with numbers. Listen carefully to what I tell you to do. Do the best you can.

Pass out the booklets, making sure that each child receives his own. THEN SAY:

> Open your booklet to page 10 and fold the pages back, like this, so that only page 10 is showing. *Write your name at the top of the page, where it says "Name."

Demonstrate. Point to the name blank in your own booklet. When all have written their names, SAY:

> Now, in the upper left-hand corner, find the sample labeled A. You see some numerals. Find the one that stands for the greatest number. Which is it?

Pause.

> Yes, 5 means more than 3,2,or4, so the space under 5 has been marked.
> Now find the sample labeled B. Mark the space under the numeral 13.

Pause.

> Did you mark under the last numeral? It is 13. The others are 3,23,and33.

Check to see that all have marked the sample correctly. THEN SAY:

> I will tell you what to mark in each of the other boxes. You mark the space under the answer that you think is right. Some will be hard, but try to do your best on each one.

Read each item number; then read each item exactl as it is stated. Pause about ten seconds before going on to the next item.

1 Now move down to the box where it says number 1 in the upper left-hand corner. What numeral should be in the box that has nothing in it? Mark the space under the numeral.

2 Move down to the next box with the number 2. Mark the space under the one that stands for the empty set.

3 Now move down to box 3. Here is a line of children. The first one is marked. Mark the fourth one.

Find number 4 and number 5. This a calendar of July, which has 31 days. When I tell you to, mark the 17th and the 27th days.

TEST 4: Mathematics Concepts (Continued)

4 First mark the 17th of the month.
5 Now mark the 27th of the month.
6 Here you see one quarter, one dime, and one nickel. How many cents are they worth all together?
7 Move down to number 7. Here you see some sticks which are bundles of tens and a few ones. How many sticks are there all together?

ow go up to the top of the next column and find umber 8.

Be sure everyone has the right place.

8 Which number is one more than one hundred ninety-nine? Mark under the number that is one more than one hundred ninety-nine.
9 Which one of the four sets is equal to the set above the line? The words in the set above the line are "cup, spoon, fork."
10 Which circle has three dots on it?
11 Now move down to number 11. Mark the number that shows how many months there are in a year.
12 Which of these numerals means six tens and four ones?
13 Which letter is made only of line segments
14 Mark the number name of the one that has the greatest value.
15 Here are four sets of circles, squares, & triangles. In which set is the number of squares greatest?
16 Think of the number 3. Now add to it zero. Your answer will be-one more-one less-zero or the same? Mark under the answer.
17 If n is a number and k is a number, then n plus k equals k plus what number? Mark under that number.

Now turn your booklet over to page 11. Find number 18 at the top of the page.

Demonstrate. See that everyone has the right place.
THEN SAY:

18 This was one set of dots. Then three were separated from the set. Which sentence tells what happened?
19 Move down to number 19. One of these four numbers comes between 89 and 199. Mark under the number.
20 Move down to number 20. Which is lightest? The ball is heavier than the book. The book is heavier than the box. Mark under the lightest one.
21 Which number is one less than one hundred fifty? Mark under the number that is one less than one hundred fifty.
22 You know that 6 minus (take away) 4 equals 2, if ... if what? If 2 plus 4 equals 4 plus 2 , 2 plus 4 equals 6, 6 plus 2 equals 8 , or 4 minus 2 equals 2. Mark under the one that is true, if 6 minus 4 equals 2.
23 A number is in the box. Mark a simple name for the number in the box.
24 Number 24 reads: "Three hundred nine equals --." Mark the number.
25 Mark the one which is not divided into four equal parts.
26 Which of these numerals is four hundred seventy-three?

Now go to number 27 at the top of the next column.

27 The picture at the top shows a round piece of paper which was folded twice, once in the middle and then in the middle again; then a piece was cut out. How will the paper look when it is unfolded? Mark under the paper that shows how it will look when it is unfolded.
28 Move down to number 28. This is a number series. Dicover how the numbers go. Then mark the two numbers that belong in the frames. Mark only one circle.
29 The letter A is under what number on this number line?

Look at the chart for numbers 30 and 31. It shows how many games four teams have won.

30 Who won the most games?
31 The Lions have won how many more games than the Seals.
32 Which one of these numerals is five hundred ninety-six?
33 Which one of these is an odd number?
34 You know that 5 minus (take away) 3 equals 2, if...if what? If 3 plus 2 equals 2 plus 3, 2 plus 3 equals 5, 5 plus 3 equals 8, or 5 plus 2 equals 7. Mark under the one that is true, if 5 minus 3 equals 2.
35 Mark the simple name for this sentence.

Ten seconds after the last item has been read SAY:

STOP! Put your pencil down and close your booklet.

Give the children a rest period of from five to fifteen minutes; then continue with directions for Test 5: Mathematics Computation.

TEST 5: Mathematics Computation

SAY to the pupils:

*Now open your booklet again and turn to page 14. Write your name at the top of the page where it says "Name."

Demonstrate. When all have done this, SAY:
Now turn to page 12 and fold the pages back, like this. *Write your name again at the top of this page where it says "Name."

Make sure that all have the correct page. When the children have written their names SAY:
Look at the sample marked A in the upper left-hand corner. It says: "3 plus 1 equals--" what? Your choices are 3,4,5,2, or NH, which means Not Here. What is the answer? What equals 3 plus 1?

Pause.
Yes, 3 plus 1 equals 4, so the space under the 4 has been marked.
Now go down to Sample B. It says:"What number minus (take away) 2 equals 1?" Mark under the answer.

Pause.
Three minus 2 equals 1, so you should mark under the 3. Does everyone understand what to do? Let's try Sample C. Read the problem to yourself and then mark under your answer.

Pause.
Two plus 3 plus 1 equals what number? Yes, 6, but there is no 6 in your choices, so you should mark under the NH for Not Here.

Make sure there are no questions about marking answers. THEN SAY:

You will work problems 1 through 29 the same way we have done these samples. When you have finished page 12, turn your booklet over to page 13 and keep on working. Then turn to page 14 and do the first column of page 14. When you have finished problems 29 and come to the "STOP" at the bottom of the first column, put your pencil down and wait for me to give you directions. Do not go to the next column until I tell you to do so. Does everyone understand what to do?

Pause.
Ready? Go!

Record the STARTING time. Watch to see that the children go on to pages 13 and 14 but do not begin the second column on page 14.

After 20 minutes, SAY:

STOP! Put your pencil down and listen carefully while I tell you what to do in the second column of page 14.
Look at the top of the second column. You see three signs. The first means "is greater than," the second means "is less than," and the third means "is equal to."

Write the three signs and their meanings on the board. THEN SAY:

Does everyone understand what these three signs mean?

Pause.
In this part of the test, you will mark the space under the sign that makes the number sentence true. Look at Sample A. Is 5 greater than, less than, or equal to 3 plus 1?

Pause.
Yes, 5 is greaterthan 3 plus 1, so the space under the sign that means "is greater than" has been marked. Now look at Sample B. Is 4 greater than, less than, or equal to 2 plus 3? Mark under the sign that makes the number sentence true.

Pause.
Did everyone mark under the sign that means "is less than"? Good, 4 is less than 2 plus 3. Now try Sample C and mark your answer.

Pause.
The sign for "is equal to" makes this sentence true.
Point to it on the board.
Does everyone understand what to do on this part of the page?

Answer any questions. THEN SAY:
You are to do questions 30 through 37 the same way we did these samples.

Ready? Go!

Record the STARTING time.
After 10 minutes, SAY:

STOP! Put your pencil down and close your booklet.

Collect the test booklets immediately.

Piers-Harris Self-Concept Scale

Note: The following charts were taken from:
Manual for the Piers-Harris Children's Self-Concept Scale
(The Way I Feel About Myself) prepared by Ellen V. Piers

published by Counselor Recordings
and Tests
Box 6184 Acklen Station
Nashville, Tennessee 37212

Reliability

Most of the reliability data come from the original standarization study which used the 95 item scale (see Table 1).

Internal consistancy. To judge the homogeneity of the test, the Kruder-Richardson Formula 21, which assumes equal difficulty of items, was employed with resulting coefficients ranging from .78 to .93. This formula, which is represented to be an underestimate as compared with Formula 20, reflects the size of the standard deviation, with the resultant lowering of the estimate for tenth-grade girls. As a check, the Spearman-Brown odd-even formula was applied for half the Grade 6 and Grade 10 sample, with resulting coefficients of .90 and .87, respectively.

TABLE 1
Reliability Data

	Grade	Sex	N	Index	Coefficients
Pennsylvania Public Schools (Piers & harris, 1964; 95 items)	3	Girls	56	Kruder-Richardson	.90
	3	Boys	63	" "	.93
	6	Girls	56	" "	.89
	6	Boys	71	" "	.90
	10	Girls	53	" "	.78
	10	Boys	64	" "	.88
	6	Both	63	Spearman-Brown	.90
	10	Both	58	" "	.87
	3	Both	56	4 month test-retest	.72
	6	Both	66	" "	.71
	10	Both	60	" "	.72
Oregon Public Schools (Wing, 1966; 80 items)	5	Both	244	2 & 4 month test-retest	.77

Stability. A retest after four months on one half the standardization sample resulted in coefficients of .72, .71, and .72, which were judged satisfactory for a personality instrument in the experimental stage over so long a period of time. The revised 80-item scale, though shorter, was shown to have a better reliability since Wing (1966) found for both a two-month and four-month test-retest coefficients of .77 for 244 fifth graders. It should be remembered that test-retest relia-

TABLE 2

Concurrent Validities and Rating Correspondence

	Age or Grade	N	Sex	Measure	Pearson r with Piers-Harris total score
Mayer (1965)	12-16 yrs.	98	Both	Lipsitt Children's Self-Concept Scale	.68**
Cox (1966)	grade 6-9	97	Both	Health Problems	-.48**
	" 6-9	97	Both	Big Problems on SRA Junior Inventory	-.64**
Piers (1965)	grade 4	54	Boys	Teacher Rating	.06
	" 4	57	Girls	" "	.41**
	" 6	58	Boys	" "	.25
	" 6	55	Girls	" "	.17
	" 4	54	Boys	Peer Rating	.26
	" 4	57	Girls	" "	.41**
	" 6	58	Boys	" "	.49**
	" 6	55	Girls	" "	.34*
Cox (1966)	grade 6-9	97	Both	Socially effective behavior	
				Teacher rating	.43**
				Peer rating	.31**
	grade 6-9	97	Both	Superego strength	
				Teacher rating	.40**
				Peer rating	.42**

* $p < .05$
** $p < .01$

TABLE 3

School Age Norms (Grades 4 through 12)
(N=1138)

Piers-Harris Raw Score	Percentile	Stanine	Piers-Harris Raw Score	Percentile	Stanine
80			44	27	4
79			43	24	4
78			42	23	3
77			41	21	3
76	99		40	20	3
75	98		39	18	3
74	97	9	38	17	3
73	96	8	37	15	3
72	95	8	36	14	3
71	94	8	35	13	3
70	93	8	34	12	3
69	91	8	33	11	3
68	89	7	32	10	3
67	87	7	31	9	3
66	85	7	30	8	2
65	82	7	29	7	2
64	79	7	28	6	2
63	77	6	27	6	2
62	74	6	26	5	2
61	71	6	25	5	2
60	69	6	24	4	1
59	66	6	23	3	
58	63	6	22	3	
57	60	5	21	2	
56	57	5	20	2	
55	55	5	19	2	
54	52	5	18	1	
53	49	5	17		
52	46	5	16		
51	44	5	15		
50	41	5	14		
49	38	4	13		
[illegible]	36	4	12		
[illegible]	33	4	11		
46	31	4	10		
45	29	4			

TABLE 4

Means and Standard Deviations for the Piers-Harris Self Concept Scale

Sample	Age or Grade	N	Mean	SD
Small town Pennsylvania Public School Children (Millen, 1966)	grade 4	275	47.79	15.19
	" 6	265	55.36	13.93
	" 8	231	52.04	13.52
	" 10	221	49.67	12.36
	" 12	191	54.56	12.05
Normative Group	Total	1183	51.84	13.87
Rural and Urban Oregon Public Schools (Wing, 1966)	grade 5	510	59 (median)	10.5 (quartile deviation)
Small town Pennsylvania Public Schools (Piers, 1965)	grade 4	111	60.40	11.40
	" 6	113	54.09	12.71
Spokane Public Schools (Eastman, 1965)	grades 5, 6	36	55.94	-----
Denver Public Schools (Guardo, 1966)	grade 6	114	58.35	13.58
East Pennsylvania School (Farls, 1966)	grade 4	221	54.3	-----
	" 5	211	56.2	-----
	" 6	207	52.7	-----
Suburban New York State Special Education Classes (Mayer, 1965)	12-13 yrs.	34	55.97	11.5
	14 "	25	51.08	15.19
	15 "	22	54.64	11.89
	16 "	17	55	12.78
Pennsylvania Public School Stutterers (Morley, 1967)	8-10.3 yrs.	40	56.48	9.15
	10.3-12 "	39	55.36	12.40
North Carolina School for Emotionally Disturbed (Borstelman, 1964)	Younger boys	7	50.4	-----
	Older "	7	60	-----
Economically Deprived Schools, Pontiac, Mich.	grades 4, 5, 6		56.42	12.06
	" 4, 5, 6		55.69	11.07

(1956). Correlations were substantial, ranging from -.54 to -.69, but are probably somewhat inflated, due to the fact that one of the factors on the Piers-Harris is labeled Anxiety and contains items similar to those on the Anxiety Scale. The Scales are also similar in method, both using self-report instruments. It is probably, however, that even allowing for the sources of error, anxiety and self concept are significantly related.

TABLE 5

Correlations with Other Measures

	Grade	N	Sex	Measure	Pearson r
Millen (1966)	4	275	Both	Children's Social Desirability Scale	.42**
	6	265	"	"	.45**
	8	231	"	"	.39**
	10	221	"	"	.25**
	12	191	"	"	.34**
Cox (1966)	6-9	97	Both	Perception of parents as loving vs. rejecting	.56**
	6-9	97	Both	Peer acceptance-rejection 4-yr. average score	.61**
Millen (1966)	4	275	Both	Children's Manifest Anxiety Scale	-.59**
	6	265	"	"	-.65**
	8	231	"	"	-.61**
	10	221	"	"	-.54**
	12	191	"	"	-.69**

$^{**}p < .01$

One would expect correlations between self concept and intelligence test scores to be positive, but probably low. Here the test methods are very different, but insofar as the child knows and accepts his intellectual status he might be expected to have it affect not only items relating directly to intellect, but possibly to his feelings about himself fenerally. Coopersmith (1967) found that in most of his group, self esteem and tested intelligence followed the same rank order, but that his Low-High group (low in self esteem, high in esteem by others) apparently ignored their high intelligence as a basis for self evaluation. His total correlation between subjective self esteem and intelligence was .28.

Table 6 reports correlations between the Piers-Harris and several intellectual measures. As can be seen, these vary considerably from zero to .48 for the full

TABLE 6

Correlations with Measures of Intelligence and Achievement

	Grade	N	Sex	I.Q. Measure	Pearson r
Piers-Harris	3	88	Both	Group	.17
(95 items)	6	116	Both	Group	.25**
Piers	4	54	Boys	Otis	-.04
(80 items)	4	57	Girls	"	.36**
	6	58	Boys	"	.27*
	6	55	Girls	"	.10
Eastman	5&6	36	Both	WISC Full Scale	.23
	"	"	"	WISC Verbal	.28
	"	"	"	WISC Performance	.08
	"	"	"	WISC Full Scale with Factor II (Intellectual and School Status)	.43**
	"	"	"	WISC Verbal Scale with Factor II	.50**
Mayer	12-16 yrs.	98	Both	WISC & Binet Standard Scores	.04
Cox	6-9	97	"	Calif. Test Ment. Mat.	.48**
Piers-Harris	3	117	Both	Achievement Test	.19*
(95 items)	6	126	"	"	.32**
Piers	4	54	Boys	"	.32*
(80 items)	4	57	Girls	"	.43**
	6	58	Boys	"	.38**
	6	55	Girls	"	.06

$*p < .05$
$**p < .01$

Administrator Directions

Piers-Harris Self-Concept Scale

(The Way I Feel About Myself)

Test Materials

Administrator directions
Test Booklets
Pencils

Time Requirements

About 30-35 minutes are required to administer the scale, but there are no time limits. If the group seems restless, a "midway stretch" may be taken after item #40 but should not last more than 2 minutes so that the test continuity will be only minimally disrupted.

Instructions to Administrator

1. Familiarize yourself with the directions for students and the instrument itself in advance of the testing session so that you feel comfortable with it. You will be reading the statements aloud to the children, so practice using an even, noncommital tone.

2. Check the conditions of the testing environment e.g. adequate number of chairs, comfortable writing surface, adequate lighting, room temperature, etc.

3. Be prepared with extra pencils

4. Before distributing the scale, you should satisfy the children's questions about the reasons for their selection by saying the following:

   "Boys and girls, our school has been asked to participate in a special project for the Educational Improvement Center. One of the jobs of the poeple at the Educational Improvement Center is to find out about how students feel about themselves and some of the things they are doing in school so that we can help you learn better and be happier. Many different children in many different schools all over New Jersey are helping out with this project. Both you and the rest of these students were chosen by chance, kind of like picking a name out of a hat.

   Today I'm going to ask you to answer some questions that have no right or wrong answers. Rather I'm going to ask you to think about how you feel about some things that can be different for each person. No one in this school is going to look at your answers. They will be completely private, so I'm going to ask you to answer as honestly as you can about your own feelings.

5. You may now pass out the instruments saying:

When you each get a booklet, please fold back the cover page and print (write) your name, age, a G or B for Girl or Boy, your grade (or unit), the name of our school and the date which is ___________________________.

Allow sufficient time for this, walking around the room to check on their accuracy. Continue saying:

Please turn the booklets over to page one and I will read the instructions with you. (Read paragraph on top of page one of instrument)

6. Be certain that all the children understand that they must answer either "yes or "no" for all items. There should be no omissions and no double circles, even if some items are hard to decide.

7. As you read the items, it would be wise to walk around the room in an unobtrusive manner to make sure the children are making the items correctly. You should also check periodically to be sure they are all on the correct number. (e.g. "Are we all on #7?")

8. The examiner should read each item clearly twice without haste, but not so slowly that second thoughts or distraction will occur. After a few items, the examiner can usually determine the optimal pace for that group.

9. One or two words in the scale may be difficult for some children (e.g."unpopular") but have been retained in the form to eliminate a double negative. These may be defined. It is also permissible to answer one or two questions at the beginning, particularly with reference to the all-or-none quality of the items.It should be explained that it is recognized that everyone feels differently at different times in different situations, but that they should mark the item the way they generally feel.

Additional questions are usually unnecessary and should be discouraged.

Random Sampling Procedure

Procedures to be followed to select a random sample of students to be tested

We are glad that you have agreed to take part in the New Jersey Ige/MUS-E research/evaluation study. In order to get a representative picture of student attitudes and achievement, it is important that you administer the enclosed instruments to a random sample of students.

The procedure to be used in selecting this sample is outlined below:

Background:

Suppose that you have a limited popluation from which you wish to draw a random sample of "n" individuals. One method of doing this would be to assign a number to each member of the population, put a set of numbered tags corresponding to the individuals into a box, and draw "n" tags from the box. The numbers on these "n" tags will correspond to the individuals to be selected. This is a satisfactory method except for the labor involved.

We can shorten this process by use of a table of random numbers. (table is appended)

Use of table of random numbers:

1. Obtain a roster of students who are in second and third grades or in their second and third year of school beyond kindergarten.

2. Number the names (from 1,2,3...n)

3. Enter the random numbers table at a random point and proceed

4. Use the computer generated random numbers table appended to select

    a. one sample of second graders of size _____ and 3 alternates
    b. one sample of third graders of size _____ and 3 alternates

This procedure should be implemented twice; once to identify the second grade sample and then to select the third grade sample.

Before proceeding further, please read the example below which will undoubtedly clarify the whole procedure.

Example:

Let's say that you wish to select a random sample of 20 students from a total population of 400 students. First, assign consecutive numbers (1,2,3,...n) Looking at the random numbers table, you will see columns of five-digit numbers, however you will only be dealing with the first three digits of each random number combination. Begin by entering the table anywhere. Three-place numbers are needed so we use three digits per column in the random numbers table. If the first number you locate in the table is 400 or less, take the corresponding student number from the roster as the first student in the sample. Continue in this manner, moving from top to bottom in the table, until 20 students have been identified. Skip numbers over 400. If a number appears twice, skip it the second time.

A-1 RANDOM NUMBERS

10	09	73	25	33	76	52	01	35	86	34	67	35	48	76	80	95	90	91	17	39	29	27	49	45
37	54	20	48	05	64	89	47	42	96	24	80	52	40	37	20	63	61	04	02	00	82	29	16	65
08	42	26	89	53	19	64	50	93	03	23	20	90	25	60	15	95	33	47	64	35	08	03	36	06
99	01	90	25	29	09	37	67	07	15	38	31	13	11	65	88	67	67	43	97	04	43	62	76	59
12	80	79	99	70	80	15	73	61	47	64	03	23	66	53	98	95	11	68	77	12	17	17	68	33
66	06	57	47	17	34	07	27	68	50	36	69	73	61	70	65	81	33	98	85	11	19	92	91	70
31	06	01	08	05	45	57	18	24	06	35	30	34	26	14	86	79	90	74	39	23	40	30	97	32
85	26	97	76	02	02	05	16	56	92	68	66	57	48	18	73	05	38	52	47	18	62	38	85	79
63	57	33	21	35	05	32	54	70	48	90	55	35	75	48	28	46	82	87	09	83	49	12	56	24
73	79	64	57	53	03	52	96	47	78	35	80	83	42	82	60	93	52	03	44	35	27	38	84	35
98	52	01	77	67	14	90	56	86	07	22	10	94	05	58	60	97	09	34	33	50	50	07	39	98
11	80	50	54	31	39	80	82	77	32	50	72	56	82	48	29	40	52	42	01	52	77	56	78	51
83	45	29	96	34	06	28	89	80	83	13	74	67	00	78	18	47	54	06	10	68	71	17	78	17
88	68	54	02	00	86	50	75	84	01	36	76	66	79	51	90	36	47	64	93	29	60	91	10	62
99	59	46	73	48	87	51	76	49	69	91	82	60	89	28	93	78	56	13	68	23	47	83	41	13
65	48	11	76	74	17	46	85	09	50	58	04	77	69	74	73	03	95	71	86	40	21	81	65	44
80	12	43	56	35	17	72	70	80	15	45	31	82	23	74	21	11	57	82	53	14	38	55	37	63
74	35	09	98	17	77	40	27	72	14	43	23	60	02	10	45	52	16	42	37	96	28	60	26	55
69	91	62	68	03	66	25	22	91	48	36	93	68	72	03	76	62	11	39	90	94	40	05	64	18
09	89	32	05	05	14	22	56	85	14	46	42	75	67	88	96	29	77	88	22	54	38	21	45	98
91	49	91	45	23	68	47	92	76	86	46	16	28	35	54	94	75	08	99	23	37	08	92	00	48
80	33	69	45	98	26	94	03	68	58	70	29	73	41	35	53	14	03	33	40	42	05	08	23	41
44	10	48	19	49	85	15	74	79	54	32	97	92	65	75	57	60	04	08	81	22	22	20	64	13
12	55	07	37	42	11	10	00	20	40	12	86	07	46	97	96	64	48	94	39	28	70	72	58	15
63	60	64	93	29	16	50	53	44	84	40	21	95	25	63	43	65	17	70	82	07	20	73	17	90
61	19	69	04	46	26	45	74	77	74	51	92	43	37	29	65	39	45	95	93	42	58	26	05	27
15	47	44	52	66	95	27	07	99	53	59	36	78	38	48	82	39	61	01	18	33	21	15	94	66
94	55	72	85	73	67	89	75	43	87	54	62	24	44	31	91	19	04	25	92	92	92	74	59	73
42	48	11	62	13	97	34	40	87	21	16	86	84	87	67	03	07	11	20	59	25	70	14	66	70
23	52	37	83	17	73	20	88	98	37	68	93	59	14	16	26	25	22	96	63	05	52	28	25	62
04	49	35	24	94	75	24	63	38	24	45	86	25	10	25	61	96	27	93	35	65	33	71	24	72
00	54	99	76	54	64	05	18	81	59	96	11	96	38	96	54	69	28	23	91	23	28	72	95	29
35	96	31	53	07	26	89	80	93	54	33	35	13	54	62	77	97	45	00	24	90	10	33	93	33
59	80	80	83	91	45	42	72	68	42	83	60	94	97	00	13	02	12	48	92	78	56	52	01	06
46	05	88	52	36	01	39	09	22	86	77	28	14	40	77	93	91	08	36	47	70	61	74	29	41
32	17	90	05	97	87	37	92	52	41	05	56	70	70	07	86	74	31	71	57	85	39	41	18	38
69	23	46	14	06	20	11	74	52	04	15	95	66	00	00	18	74	39	24	23	97	11	89	63	38
19	56	54	14	30	01	75	87	53	79	40	41	92	15	85	66	67	43	68	06	84	96	28	52	07
45	15	51	49	38	19	47	60	72	46	43	66	79	45	43	59	04	79	00	33	20	82	66	95	41
94	86	43	19	94	36	16	81	08	51	34	88	88	15	53	01	54	03	54	56	05	01	45	11	76
98	08	62	48	26	45	24	02	84	04	44	99	90	88	96	39	09	47	34	07	35	44	13	18	80
33	18	51	62	32	41	94	15	09	49	89	43	54	85	81	88	69	54	19	94	37	54	87	30	43
80	95	10	04	06	96	38	27	07	74	20	15	12	33	87	25	01	62	52	98	94	62	46	11	71
79	75	24	91	40	71	96	12	82	96	69	86	10	25	91	74	85	22	05	39	00	38	75	95	79
18	63	33	25	37	98	14	50	65	71	31	01	02	46	74	05	45	56	14	27	77	93	89	19	36
74	02	94	39	02	77	55	73	22	70	97	79	01	71	19	52	52	75	80	21	80	81	45	17	48
54	17	84	56	11	80	99	33	71	43	05	33	51	29	69	56	12	71	92	55	36	04	09	03	24
11	66	44	98	83	52	07	98	48	27	59	38	17	15	39	09	97	33	34	40	88	46	12	33	56
48	32	47	79	28	31	24	96	47	10	02	29	53	68	70	32	30	75	75	46	15	02	00	99	94
69	07	49	41	38	87	63	79	19	76	35	58	40	44	01	10	51	82	16	15	01	84	87	69	38

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RANDOM NUMBERS (CONTINUED) A-1

09	18	82	00	97	32	82	53	95	27	04	22	08	63	04	83	38	98	73	74	64	27	85	80	44
90	04	58	54	97	51	98	15	06	54	94	93	88	19	97	91	87	07	61	50	68	47	66	46	59
73	18	95	02	07	47	67	72	62	69	62	29	06	44	64	27	12	46	70	18	41	36	18	27	60
75	76	87	64	90	20	97	18	17	49	90	42	91	22	72	95	37	50	58	71	93	82	34	31	78
54	01	64	40	56	66	28	13	10	03	00	68	22	73	98	20	71	45	32	95	07	70	61	78	13
08	35	86	99	10	78	54	24	27	85	13	66	15	88	73	04	61	89	75	53	31	22	30	84	20
28	30	60	32	64	81	33	31	05	91	40	51	00	78	93	32	60	46	04	75	94	11	90	18	40
53	84	08	62	33	81	59	41	36	28	51	21	59	02	90	28	46	66	87	95	77	76	22	07	91
91	75	75	37	41	61	61	36	22	69	50	26	39	02	12	55	78	17	65	14	83	48	34	70	55
89	41	59	26	94	00	39	75	83	91	12	60	71	76	46	68	94	97	23	06	94	54	13	74	08
77	51	30	38	20	86	83	42	99	01	68	41	48	27	74	51	90	81	39	80	72	89	35	55	07
19	50	23	71	74	69	97	92	02	88	55	21	02	97	73	74	28	77	52	51	65	34	46	74	15
21	81	85	93	13	93	27	88	17	57	05	68	67	31	56	07	08	28	50	46	31	85	33	84	52
51	47	46	64	99	68	10	72	36	21	94	04	99	13	45	42	83	60	91	91	08	00	74	54	49
99	55	96	83	31	62	53	52	41	70	69	77	71	28	30	74	81	97	81	42	43	86	07	28	34
33	71	34	80	07	93	58	47	28	69	51	92	66	47	21	58	30	32	98	22	93	17	49	39	72
85	27	48	68	93	11	30	32	92	70	28	83	43	41	37	73	51	59	04	00	71	14	84	36	43
84	13	38	96	40	44	03	55	21	66	73	85	27	00	91	61	22	26	05	61	62	32	71	84	23
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A-1 RANDOM NUMBERS (CONTINUED)

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50	95	81	76	95	58	07	26	89	90	60	32	99	59	55	71	58	66	34	17	35	94	76	78	07
57	62	16	45	47	46	85	03	79	81	38	52	70	90	37	64	75	60	33	24	04	98	68	36	66
09	28	22	58	44	79	13	97	84	35	35	42	84	35	61	69	79	96	33	14	12	99	19	35	16
23	39	49	42	06	93	43	23	78	36	94	91	92	68	46	02	55	57	44	10	94	91	54	81	99
05	28	03	74	70	93	62	20	43	45	15	09	21	95	10	18	09	41	66	13	78	23	45	00	01
95	49	19	79	76	38	30	63	21	92	82	63	95	46	24	72	43	49	26	06	23	19	17	46	93
78	52	10	01	04	18	24	87	55	83	90	22	65	07	35	54	03	46	62	51	35	77	41	46	92
96	34	54	45	79	85	93	24	40	53	75	70	42	08	40	86	58	38	39	44	52	45	67	37	88
77	96	33	11	51	32	36	49	16	91	47	35	74	03	38	23	43	52	40	65	08	45	89	53	66
07	52	01	12	94	23	23	80	17	48	41	69	06	73	28	54	81	43	77	77	10	05	74	23	32
38	42	30	23	09	70	70	38	57	36	46	14	81	42	58	29	23	61	21	52	05	08	86	58	25
02	46	36	55	33	21	19	96	05	55	33	92	80	18	17	07	39	68	92	15	30	72	22	21	02
15	88	09	22	61	17	29	28	81	90	61	78	14	88	98	92	52	52	12	83	88	58	16	00	98
71	92	60	08	19	59	14	40	02	24	30	57	09	01	94	18	32	90	69	99	26	85	71	92	88
64	42	52	81	08	16	55	41	60	16	00	04	28	32	29	10	33	83	61	68	65	61	79	48	34
79	78	22	39	24	49	44	03	04	32	81	07	73	15	43	95	21	66	48	65	13	65	85	10	81
35	33	77	45	38	44	55	36	46	72	90	96	04	18	49	93	86	54	46	08	93	17	63	48	51
05	24	92	93	29	19	71	59	40	82	14	73	88	66	67	43	70	86	63	54	93	69	22	55	27
56	46	39	93	80	38	79	38	57	74	19	05	61	39	39	46	06	22	76	47	66	14	66	32	10
96	29	63	31	21	54	19	63	41	08	75	81	48	59	86	71	17	11	51	02	28	99	26	31	65
98	38	03	62	69	60	01	40	72	01	62	44	84	63	85	42	17	58	83	50	46	18	24	91	26
52	56	76	43	50	16	31	55	39	69	80	39	58	11	14	54	35	86	45	78	47	26	91	57	47
78	49	89	08	30	25	95	59	92	36	43	28	69	10	64	99	96	99	51	44	64	42	47	73	77
49	55	32	42	41	08	15	08	95	35	08	70	39	10	41	77	32	38	10	79	45	12	79	36	86
32	15	10	70	75	83	15	51	02	52	73	10	08	86	18	23	89	18	74	18	45	41	72	02	68
11	31	45	03	63	26	86	02	77	99	49	41	68	35	34	19	18	70	80	89	76	67	70	81	10
12	36	47	12	10	87	05	25	02	41	90	78	59	78	89	81	39	95	81	80	64	43	90	56	14

APPENDIX C

IGE - New Careers in Education

Evaluation Design

Evaluation Design

IGE - New Careers in Education

GOAL 1

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will produce significant changes in student learning.

1.1 In comparison with children in control groups, students in IGE classrooms will show significantly greater achievement in reading and/or math as measured by a standardized achievement test. (Reading and/or math will be measured as appropriate to the implementation process in the specific schools in the study.)

Performance to be Measured

Student achievement in reading and/or math.

Selection of Participants

A random sample of schools will be drawn from those first and second cylcle IGE schools that are implementing reading and/or math within the MUS-E design. Students will be sampled within the identified schools. A matched sample of students not attending an IGE school will be drawn to serve as a control group for the purposes of this study.

Measurement Instruments and Data Collection Procedures

Appropriate batteries of the Stanford Achievement Tests, 1973 edition, will be used to measure achievement in reading and/or math. (The subject area will be determined by the implementation process in each school in the study.) The students in both the IGE and the control groups will be tested in February, 1974, to allow for maximum exposure to the IGE/non-IGE experience.

Data Analysis Techniques

Scores from IGE and control schools will be analyzed with a *t*-test for differences between means. A second level analysis will be accomplished, using the judgments of IGE facilitators, to compare differences between schools that are highly successful in implementing IGE procedures with those that are not. Nonparametric statistics will be used to analyze these differences. A 0.05 level of significance will be utilized.

1.2 In comparison with children in control groups, students in IGE classes will demonstrate significantly more positive attitudes toward school.

Performance to be Measured

Student attitude toward school.

Selection of Participants

The same IGE and control populations that participate in the reading/math achievement testing (indicator 1.1) will participate in this aspect of the design.

Measurement Instruments and Data Collection Procedures

A RETE-developed instrument, ATCA, will be administered to measure any differences between students in IGE and control schools with respect to their attitudes toward school. The ATCA was adapted from work done at the Institute for Educational Research, Downers Grove, Illinois. (See Appendix.)

Data Analysis Techniques

Total scores will be analyzed a *t*-test for differences between means. A 0.05 level of significance will be utilized.

Person(s) Responsible For Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

GOAL II

Goal: As a result of state network implementation by the New Careers in Education Office, first and second cycle elementary schools meeting minimum IGE implementation criteria will show characteristics which are likely to facilitate long-term commitment to the IGE process.

2.1 Expenditures will show no significant increase for start up and maintenance costs.

Performance to be Measured

Amount and use of those funds available to the building principal of an IGE-MUS-E school. (i.e., whether the school, functioning within the IGE-MUS-E design is actually more costly to operate, or whether only a redistribution of monies is required. Areas under question will include hiring of paraprofessionals, unit leader compensation, released time for teachers, and instructional materials.)

Selection of Participants

All first and second cycle IGE schools as identified by the New Careers in Education Office.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each IGE building principal asking him/her to identify cost items such as those listed above as they relate to current expenses and expenses for the one year prior to IGE implementation. The instrument will be mailed to principals in spring, 1974, to allow for inclusion of data from the current academic year.

Data Analysis Techniques

Each item of the survey will be analyzed and tabulated. Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

2.2 Pupil absenteeism will show no significant increase from previous years.

Performance to be Measured

Pupil absenteeism in first and second cycle IGE schools.

Selection of Participants

Records on student populations from all first and second cycle schools will be included.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each building principal soliciting statistical data relative to pupil absenteeism both presently and prior to IGE implementation. The instrument will be mailed to principals in spring, 1974, to allow for inclusion of data from the current academic year. This form is currently under development by RETE.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director.

2.3 Teacher attendance and turnover will show no significant change from previous years.

Performance to be Measured

Teacher attendance/absenteeism. Incidence of teacher turnover.

Selection of Participants

Records for teacher populations from all first and second cycle schools will be included.

Measurement Instruments and Data Collection Procedures

A data collection form will be mailed to each IGE building principal soliciting statistical data relative to teacher attendance and turnover both presently and in the one year prior to their IGE MUS-E implementation. The instrument will be mailed to principals in the late spring, 1974, to allow for inclusion of data from the current academic year.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Research Evaluation Team for Education (RETE), Dr. Karen Todd, Director

2.4 LEA's will be able to assess the effectiveness of the IGE progress at the local level.

Performance to be Measured

Community support for IGE. Locally selected aspects of the RETE-NCE evaluation design.

Selection of Participants

Any LEA which is participating in the New Careers - IGE project and has not been designated as participating in the RETE-NCE evaluation design.

Measurement Instruments and Data Collection Procedures

Names, sources, and background information on instruments RETE will employ, as well as in instrument appropriate to measurement of community attitudes toward IGE, will be included in an evaluation procedures packet. This packet will be made available through the New Careers in Education Office. All or part of this packet may be employed by the LEA's at their discretion.

Data Analysis Techniques

Analysis techniques employed will be determined by the LEA, with guidelines supplied in the packet.

Person(s) Responsible for Evaluation

To be determined by the individual LEA's.

GOAL III

Goal: A system will be developed and operative whereby the implementation process of IGE can be monitored and expanded by the New Careers in Education Office.

3.1 75% of IGE league members who request assistance from the New Careers in Education Office will indicate that the NCE Office did provide assistance that was appropriate to their problem.

Performance to be Measured

Assistance provided by the New Careers in Education Office to IGE league members.

Selection of Participants

All members of the IGE leagues will be asked to provide feedback data with respect to assistance received from the New Careers in Education Office.

Measurement Instruments and Data Collection Procedures

A data collection form developed by RETE will be used by the NCE Office to obtain appropriate feedback from league members.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office

3.2 80% of the areas of concern reported to facilitators and recorded on the school visitation summary will be followed through by the New Careers in Education Office with appropriate action at the HUB or league level.

Performance to be Measured

Response by the New Careers in Education Office to facilitator reports.

Selection of Participants

Personnel in IGE schools who relate their concerns to league facilitators.

Measurement Instruments and Data Collection Procedures

School visitation summary forms completed by league facilitators will be used to record the concerns communicated to them by IGE school personnel. Evidence of action taken will be documented in NCE Office records.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

3.3 75% of the principals from IGE schools will indicate at least three specific examples of how a facilitator helped in the implementation of this program.

Performance to be Measured

Facilitator assistance to principals of IGE schools with respect to the IGE MUS-E implementation process.

Selection of Participants

All principals of IGE schools will be asked to provide examples of facilitator assistance in the implementation process.

Measurement Instruments and Data Collection Procedures

Feedback forms developed by RETE will be mailed to IGE school principals to solicit appropriate feedback information.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

3.4 Each league chairman will be able to indicate at least two specific examples of how a HUB meeting helped solve a specific problem for him.

Performance to be Measured

Effectiveness of HUB meetings as problem-solving vehicles for league chairmen.

Selection of Participants

All league chairmen will be asked to provide feedback data on HUB meetings.

Measurement Instruments and Data Collection Procedures

A data collection form developed by RETE will be used by the NCE Office to solicit appropriate feedback from league chairmen, following HUB meetings.

Data Analysis Techniques

Descriptive statistics will be used to report findings.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

GOAL IV

Goal: 100% of the 15 third cycle school districts undergoing a clinical training approach will meet minimum IGE implementation criteria June, 1975.

4.1 By October 30, 1973, at least 15 school districts will request to take part in a pre-clinical workshop.

Performance to be Measured

Number of school districts requesting to participate in a pre-clinical workshop.

Selection of Participants

N.J. school districts that select themselves by requesting to participate.

Measurement Instruments and Data Collection Procedures

Records of request coming into the New Careers in Education Office.

Data Analysis Techniques

Total number of requests will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.2 By December 31, 1973, at least 15 school districts will have submitted a formal application with documentation evidence and will have met the standards of the New Careers in Education Office for IGE participation.

Performance to be Measured

Number of school districts submitting formal application and documentation evidence and meeting standards of the New Careers in Education Office for IGE participation.

Selection of Participants

N.J. school districts that select themselves by following application procedures and meeting NCE criteria for IGE participation.

Measurement Instruments and Data Collection Procedures

Records of application procedures and criteria for IGE participation as maintained by the NCE Office.

Data Analysis Techniques

Total number of applicants who meet minimum criteria will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.3 By the end of the clinical workshop, 100% of the principals and unit leaders will score 80% or higher on a test of IGE knowledge and skills.

Performance to be Measured

Knowledge of IGE application and skills.

Selection of Participants

Principals and unit leaders identified by their respective school districts to participate in a clinical workshop.

Measurement Instrument and Data Collection Procedures

The IGE Concepts Test by Mary Quilling and Juanita Sorenson from the Wisconsin Research and Development Center for Cognitive Planning will be administered by personnel from the New Careers in Education Office. Each section of the instrument will be used to ascertain knowledge acquired during a corresponding module of the ten day clinical workshop.

Data Analysis Techniques

Subtest scores for each workshop participant will be totaled to determine the level of mastery achieved by each principal and unit leader, and the percentage of correct answers will be calculated. The percent of participants who score 80% or higher will be determined.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

4.4 By the end of their clinical experience, all participating schools will have met the first two criteria for an IGE school and will have evidence that they are working toward the third criterion.

Performance to be Measured

Satisfaction of criteria as a Multi-Unit School (MUS-E) on the organizational level, including a functioning Instructional Improvement Committee (IIC). Evidence of movement toward implementing IGE in at least one subject area.

Selection of Participants

Schools whose personnel have participated in the clinical workshop.

Measurement Instruments and Data Collection Procedures

Facilitator school visitation summaries and observations will be used to validate the schools' satisfaction of the above stated conditions.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

GOAL V

Goal: By June 1975, seven middle schools will meet minimum IGE implementation criteria.

5.1 By July 1, 1973 at least seven middle schools will request to take part in a pre-clinical workshop.

Performance to be Measured

Number of school districts requesting to participate in a pre-clinical workshop.

Selection of Participants

N.J. school districts that select themselves by requesting to participate.

Measurement Instruments and Data Collection Procedures

Records of requests coming into the New Careers in Education Office.

Data Analysis Techniques

Total number of requests will be reported.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

5.2 By September 30, 1973 at least seven middle schools will have submitted a formal application with documentation evidence, and will have met the standards of the New Careers in Education Office for IGE participation.

Performance to be Measured

Number of school districts submitting formal application and documentation evidence and meeting standards of the New Careers in Education Office for IGE participation.

Selection of Participants

N.J. school districts that select themselves by following application procedures and meeting NCE criteria for IGE participation.

Measurement Instruments and Data Collection Procedures

Records of application procedures and criteria for IGE participation as maintained by NCE Office.

5.3 By the end of their clinical workshop, 100% of the principals and unit leaders will score 80% or higher on a test of IGE knowledge of application and skills.

Performance to be Measured

Knowledge of IGE application and skills.

Selection of Participants

Principals and unit leaders identified by their respective school districts to participate in a clinical workshop.

Measurement Instruments and Data Collection Procedures

The IGE Concepts Test by Mary Quilling and Juanita Sorenson from the Wisconsin Research and Development Center for Cognitive Learning, adapted by RETE for use with middle schools, will be administered by personnel from the New Careers in Education Office. Each section of the instrument will be used to ascertain knowledge acquired during a corresponding module of the ten day clinical workshop.

Data Analysis Techniques

Subtest scores for each workshop participant will be totaled to determine the level of mastery achieved by each principal and unit leader and percent of mastery will be calculated. The percent of participants scoring at the 80% level or above will be calculated.

Person(s) Responsible for Evaluation

Designated personnel from the New Careers in Education Office.

5.4 By the end of their clinical experience, all participating schools will have met the first two criteria for an IGE school and will have evidence that they are working toward the third criterion.

Performance to be Measured

Satisfaction of criteria as a Multi-Unit School (MUS-E) on the organizational level, including a functioning Program Improvement Council (PIC). Evidence of movement toward implementing IGE in at least one subject area.

Selection of Participants

Schools whose personnel have participated in the clinical workshop.

Measurement Instruments and Data Collection Procedures

Facilitator school visitation summaries and observations will be used to validate the schools' satisfaction of the above stated conditions.

Data Analysis Techniques

Descriptive statistics will be used.

Person(s) Responsible for Evaluation

Designated personnel in the New Careers in Education Office.

Attitude Toward Classroom Atmoshpere (ATCA)

The original instrument of forty items was developed at the Institute for Educational Research, Downers Grove, Illinois. RETE examined the items for relevance of content to this project's objectives. The instrument was then piloted with 122 first through fifth graders. Item analysis, re-examination of content, and subjective feedback from examiners were then used to arrive at the present thirty item form. Two answer forms were designed to simplify test taking procedures: a primary form for use with first through third graders, and an elementary form for use with fourth and fifth graders. A standard set of directions for administration were also developed.

The reliability of the ATCA will be studied using both split-half and test-retest correlations. A measure of the instrument's concurrent validity will be obtained as follows:

a. use of the ATCA with groups receiving different experimental treatment and comparison of the resulting scores.

b. comparison of actual scores with observational ratings submitted by evaluators.

c. correlation of ATCA scores with scores obtained by the same group on the "Creativity Attitude Survey."

d. correlation of ATCA scores with scores obtained by the same group on the "at school" dimension of the "Satisfaction of Values Inventory."

Stanford Achievement Test, Form A, 1973 edition. (Harcourt Brace Jovanovich, Inc.)

This latest edition of the Stanford Achievement Test includes six battery levels spanning elementary and junior high school. According to the publishers, a major goal of the revision was "to make sure that the content of the test would be in harmony with present instructional objectives and measure what is actually taught in today's schools." Selection of the Stanford Achievement Test as the cognitive measure for this project evaluation was based on the depth of the work done in test construction and development, a complete description of which may be found in the Norms Booklet accompanying the instrument. Additional consideration was given to the fact that none of the schools included in the sample are currently using these tests in their testing programs. Finally, the batteries relevant to reading and math can be easily isolated as

Feedback Forms

The attached forms were developed to meet the specific needs and procedures of the New Careers in Education Office.

Objective 3.1
NCE/IGE

1. Have you or your staff consulted personnel from the New Careers in Education Office for assistance in dealing with a specific problem relative to your school's IGE implementation process?

yes ___ no ___

2. If yes, please complete the form below.

What was the nature of the problem in question?	To whom were you referred for assistance?	**Was the assistance offered appropriate to the problem? If no, please explain.**
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.

Objective 3.3
NCE/IGE

Questionnaire - 3x/year - November 15, February 15, May 15
To principals and U. L. ?

1. How often are you in contact with your league facilitator?

2. When was your most recent contact with him/her?

3. What kinds of specific implementation assistance have you or your staff received from your IGE facilitator?

    1.

    2.

    3.

    4.

    5.

Objective 3.4
NCE/IGE

To be filled out by league chairman following each HUB meeting:

League Chairman ____

1. Please indicate specific problems you had prior to this HUB meeting, that were dealt with by this group.

    1.

    2.

    3.

2. Did this HUB meeting help you solve these problems? If yes - how? (Please be specific and concise.)

    1.

    2.

    3.